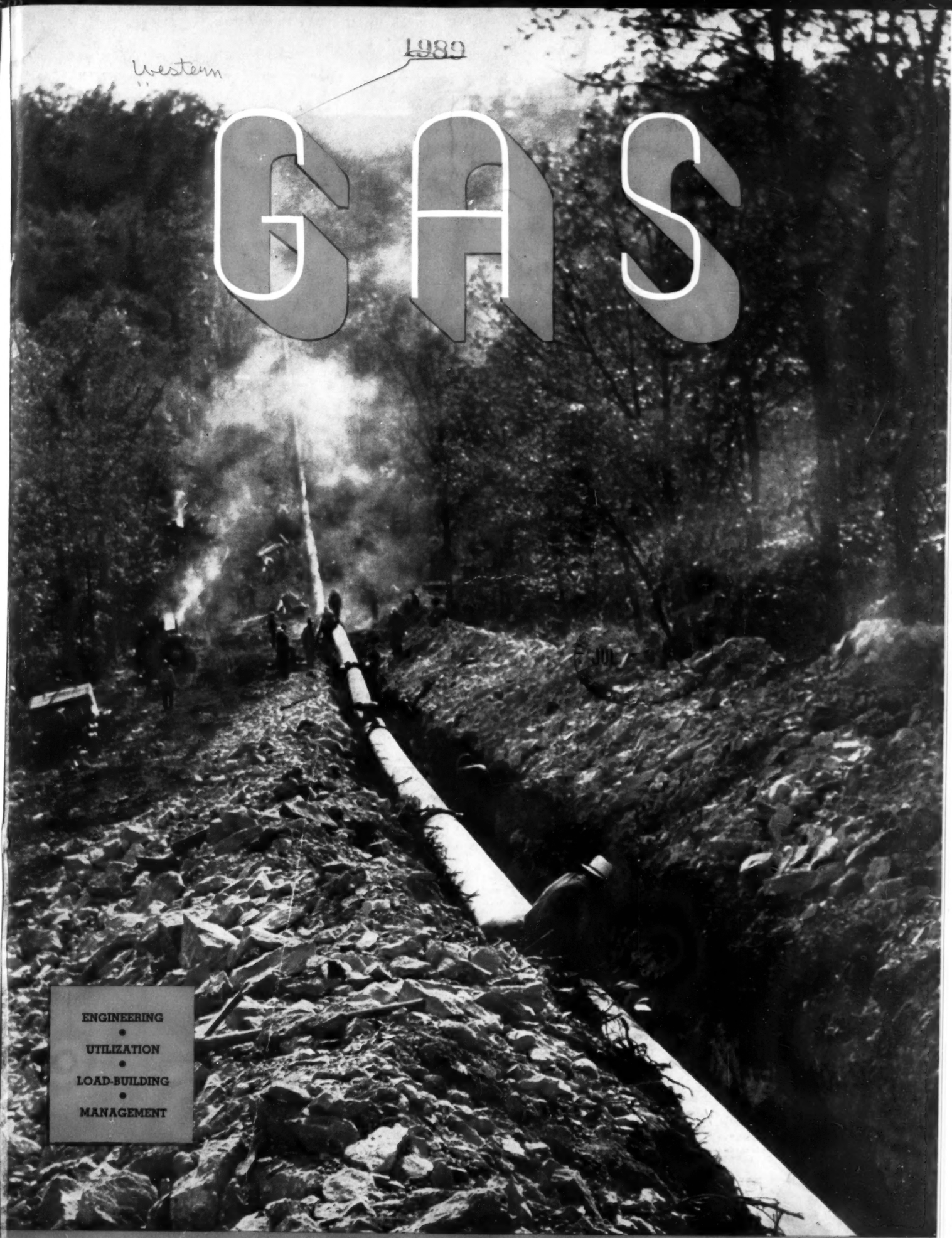
Western
1989

GAS



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JULY 1938 ♦ ♦ 25 CENTS

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NOTHING TAKES THE PLACE OF THE PULLEY

NOTHING TAKES THE PLACE OF CAST IRON PIPE

THE STANDARD MATERIAL FOR UNDERGROUND MAINS

NOTHING serves the purpose so well as the *pulley*—nothing meets all the requirements of an efficient long-lived underground main so well as *cast iron pipe.* Both have been engineering standbys for centuries. Nothing takes their place.

If you demand *proved* long life and low maintenance cost that result from effective resistance to corrosion—assured safety margins for impact, beam load and crushing stresses—and permanently tight joints—then you will agree that *nothing takes the place of cast iron pipe.* Some materials meet some of these requirements but only cast iron pipe meets them all.

Two-inch cast iron natural gas main replacing substitute pipe that failed in six years, showing expansion joint connection to a remaining section of old main.

Look for the "Q-Check" registered trade mark. Cast iron pipe is made in diameters from 1¼ to 84 inches.

CAST Q IRON

THE CAST IRON PIPE RESEARCH ASSOCIATION, THOMAS F. WOLFE, RESEARCH ENGINEER, 1013 PEOPLES GAS BUILDING, CHICAGO, ILLINOIS

HW. 9/23/39

It Couldn't Have Caused More Excitement if It Had Been a Bomb!

WHAT! No more service-fitting troubles? No *wonder* so many gas-distribution men become interested, then excited—just as you will be when you get YOUR sample of this new Dresser SUPER SERVICE Fitting*, Style 90, for joining gas services. Check these features that assure you of easier service work, tighter joints:

ALL THESE ADVANTAGES!

1. Easy assembly on pipe already deflected; 2. Ample, *wedge-shaped* gaskets** and plenty of "take-up" of nut on body provide *reserve sealing power* for positive tightness, both on corroded or deflected pipe; 3. "Stab" fit eliminates necessity for disassembly before installation; 4. Exclusive, *cup-shaped* gasket-retainer ring confines and automatically centers itself on gasket, preventing nut from fouling on gasket, with consequent false sense of tightness; 5. Ruggedly constructed throughout; 6. Fully flexible; 7. Anyone can install, on plain-end pipe, using only a wrench, even under adverse ditch or weather conditions, with complete safety, and without need for exact pipe lengths; 8. Long pipe entrance afforded; 9. Connection is union-type; 10. Can be salvaged for re-use.

SEND FOR FREE SAMPLE

and 16-page descriptive booklet. No obligation. Give pipe ID and type* of fitting desired.

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Cutaway view of Dresser SUPER-SERVICE Regular Coupling, showing how it connects plain-end pipe. Working principle is based on that used for 50 years in Dresser Bolted Couplings, Style 38.

*Dresser SUPER SERVICE Fittings Style 90, are available in Regular Couplings (5" body), Long Couplings (10" body), 45° and 90° Regular Ells, Plain-end and Threaded-end 90° Street Ells and Street Tees; sizes: ¼" ID to 2" ID, inclusive.

Dresser SUPER SERVICE Fittings

**Gaskets used in SUPER SERVICE Fittings, Style 90, are same shape as those in famous Dresser Bolted Couplings, Style 38. Can be supplied in plain Grade 27, plain Grade 29, Armored Grade 27, duck-tipped Grade 27, and lead-tipped Grade 27.

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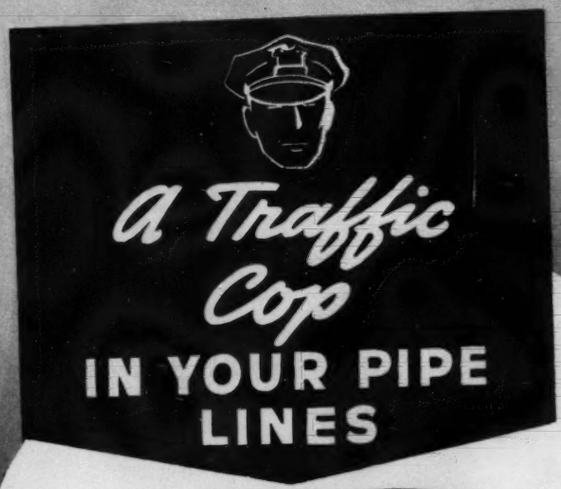
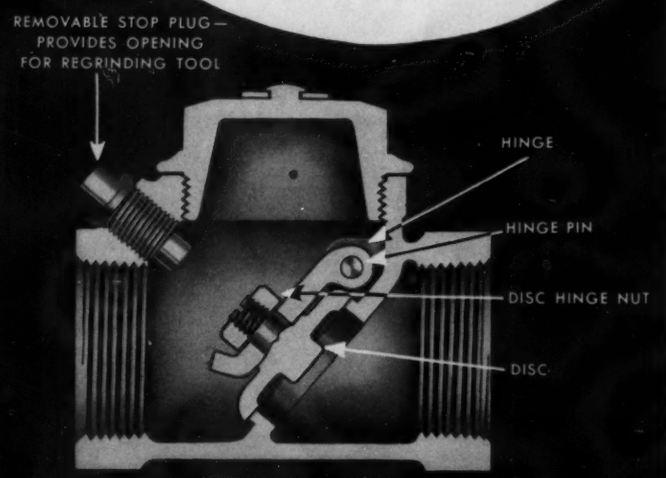
CRANE SWING CHECK VALVES



Crane No. 35 Brass Swing Check Valve. Regrinding type. Fully described on page 34 of your Crane No. 52 Catalog. Cross section shown below.



IT'S WHAT'S INSIDE THAT COUNTS!

FOR THE GAS INDUSTRY

Crane Swing Check Valves police your piping—permitting flow in one direction only—preventing dangerous back flow . . . are often the most important valves in a piping system. On power lines or process lines—they control cold water, hot water, steam or gas. Pipe line policing is tough on check valves—they're subject to a lot of abuse. And because service requirements differ in every application, satisfactory performance depends on your selection of good check valves as well as valves of the proper type.

Crane makes Swing Checks for every type of service. Some have metal discs, others discs of leather. Some have outside levers and weights; and still others, the foot valves, are specifically for use on the suction line of pumps to do away with hand priming.

Or take the regrindable disc check. Here is a valve with a swivel disc that may be quickly ground while the valve is in the line—and with no other tool than a screwdriver. On liquid lines they assure constant, tight seating with no danger from leakage.

Every specific application requires a specific check valve—one that is readily available in the Crane line. The new Crane booklet "Checking Up on Check Valves" contains valuable information on the selection and application of checks for any service. A copy will be sent upon request. Be sure to consult the Crane salesman on your check valve requirements.

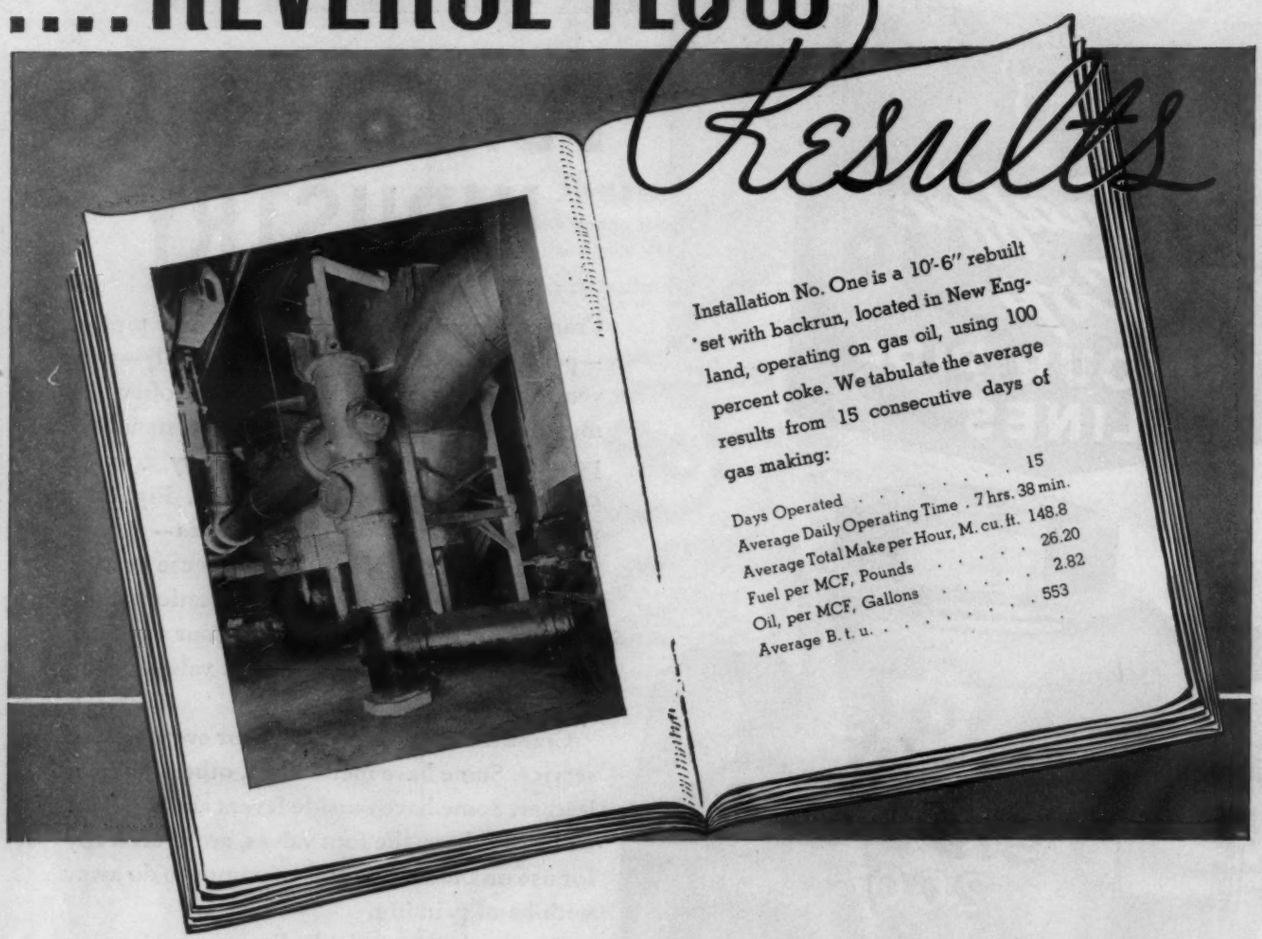
CRANE

VALVES • FITTINGS • PIPE • PLUMBING • HEATING • PUMPS

CRANE CO., GENERAL OFFICES: 836 S. MICHIGAN AVE., CHICAGO

NATION-WIDE SERVICE THROUGH 134 BRANCHES AND MORE THAN 500 WHOLESALERS

....REVERSE FLOW *Results*


Installation No. One is a 10'-6" rebuilt set with backrun, located in New England, operating on gas oil, using 100 percent coke. We tabulate the average results from 15 consecutive days of gas making:
Days Operated 15
Average Daily Operating Time . 7 hrs. 38 min.
Average Total Make per Hour, M. cu. ft. 148.8
Fuel per MCF, Pounds 26.20
Oil, per MCF, Gallons 2.82
Average B. t. u. 553

FOUR SEMET-SOLVAY REVERSE FLOW WATER GAS MACHINES have gone into service. They are building up a record of results that more than justifies the enthusiasm of gas men for the process.

These machines are now making gas with both coal and coke as generator fuel—with bunker "C" oil or gas oil for enrichment at average city gas heating value—with coke and gas oil for high B.t.u. gas. They are meeting satisfactorily the requirements of calorific value, specific gravity and volume output.

The Semet-Solvay Reverse Flow Process is offered on its ability to deliver better yields from gas making materials and to lower the cost of gas in the holder. In substantiation of our claims, we shall let the machines built for Reverse Flow tell their own story in this series of advertisements. Figures presented offer a basis for comparison with individual plant records.

We believe it is possible to show that Reverse Flow can be installed in a majority of carbureted water gas plants, to yield economies and improvements that make it a most desirable investment. A preliminary calculation will be prepared without obligation for gas companies furnishing data on their present production.

SEMET-SOLVAY

ENGINEERING SEMET-SOLVAY ENGINEERING CORP. WE SELL SOLUTIONS TO HARD PROBLEMS NEW YORK **CORPORATION**

Engineers *Contractors*

40 RECTOR ST. NEW YORK, N. Y.

WHEN DAYTON No. 5 COUPLINGS ARE USED FOR REPAIRING BROKEN STEEL LINES . . . ESPECIALLY WHEN IT IS NECESSARY TO REMOVE A SECTION OF THE PIPE . . .

the repair is permanent!

THE NATIONAL SUPPLY COMPANY

(DAYTON COUPLING DIVISION)

TOLEDO, OHIO, U. S. A.

YOU CAN'T *laugh off* THESE FACTS!

about National Steel Pipe for gas mains, laterals and service lines

1. Offers greater all-round reliability. Maintenance records prove conclusively that pipe of no other commercial material is superior to steel pipe, from the standpoint of all-round reliability in service. This is due mainly to its ability to withstand successfully both ordinary and extraordinary stresses.

2. Eliminates risk of sudden fractures. Gas lines of National Steel Pipe do not "let go" suddenly, because the steel from which this pipe is made is high in tensile strength, high in ductility. Trench pressures, cave-ins, ground settlement, and constant vibration from heavy street traffic cause this pipe merely to flex under the load without developing cracks or fissures in the metal.

3. Withstands higher pressures. Only clean, finest quality steel, free from flaws or inclusions, goes into the making of NATIONAL Steel Pipe. Its consistently high-tensile strength (from 49,000 to 80,000 pounds per square inch) renders this pipe particularly adaptable for the higher gas pressures required in modern service.

4. Comes in longer lengths. NATIONAL Steel Pipe is produced in long average lengths. This means fewer joints per mile, faster installation, lower laying costs, and reduced leakage.

5. Saves money on maintenance. Every time the resilience and strength of this pipe prevent the formation of a leak, you save money these four ways: You save the cost of locating the leakage; you save the cost of uncovering and repairing the break; you save the value of the escaped gas; you preclude the possibility of a damage claim.

In the face of facts like these, isn't it logical that gas companies in all parts of the country are entrusting their service, more and more, to NATIONAL Steel Pipe? It's simply a matter of economics — *costs are likely to be higher without it; they are likely to be lower with it.*

Write for complete data about steel pipe, especially about NATIONAL Seamless Pipe—Walls Without Welds —***Metallurgy's nearest approach to the Perfect Pipe.***

NATIONAL TUBE COMPANY

PITTSBURGH, PA.

Columbia Steel Company, San Francisco, *Pacific Coast Distributors* · United States Steel Products Company, New York, *Export Distributors*

UNITED STATES STEEL

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THE WARNING ODOR FOR FUEL GASES

When **PENTALARM** is used for the odorization of natural gas, handling and storage problems are minimized . . . for **PENTALARM** is a "stream-lined" odorant, so concentrated, so powerful in effect, that only a small amount need be purchased at a time. This is readily proven by the fact that 2 fifty-five gallon drums will odorize 1,000,000,000 cubic feet of gas.

PENTALARM may also be obtained in 1- and 5-gallon containers, enough for 10- and 50-million cubic feet of gas respectively. Rehandling of the empty containers can be eliminated because **PENTALARM** may be shipped in light-weight, inexpensive drums that are non-returnable.

For safety, service and satisfaction . . . odorize with **PENTALARM!**

SHARPLES TRADE MARK SOLVENTS

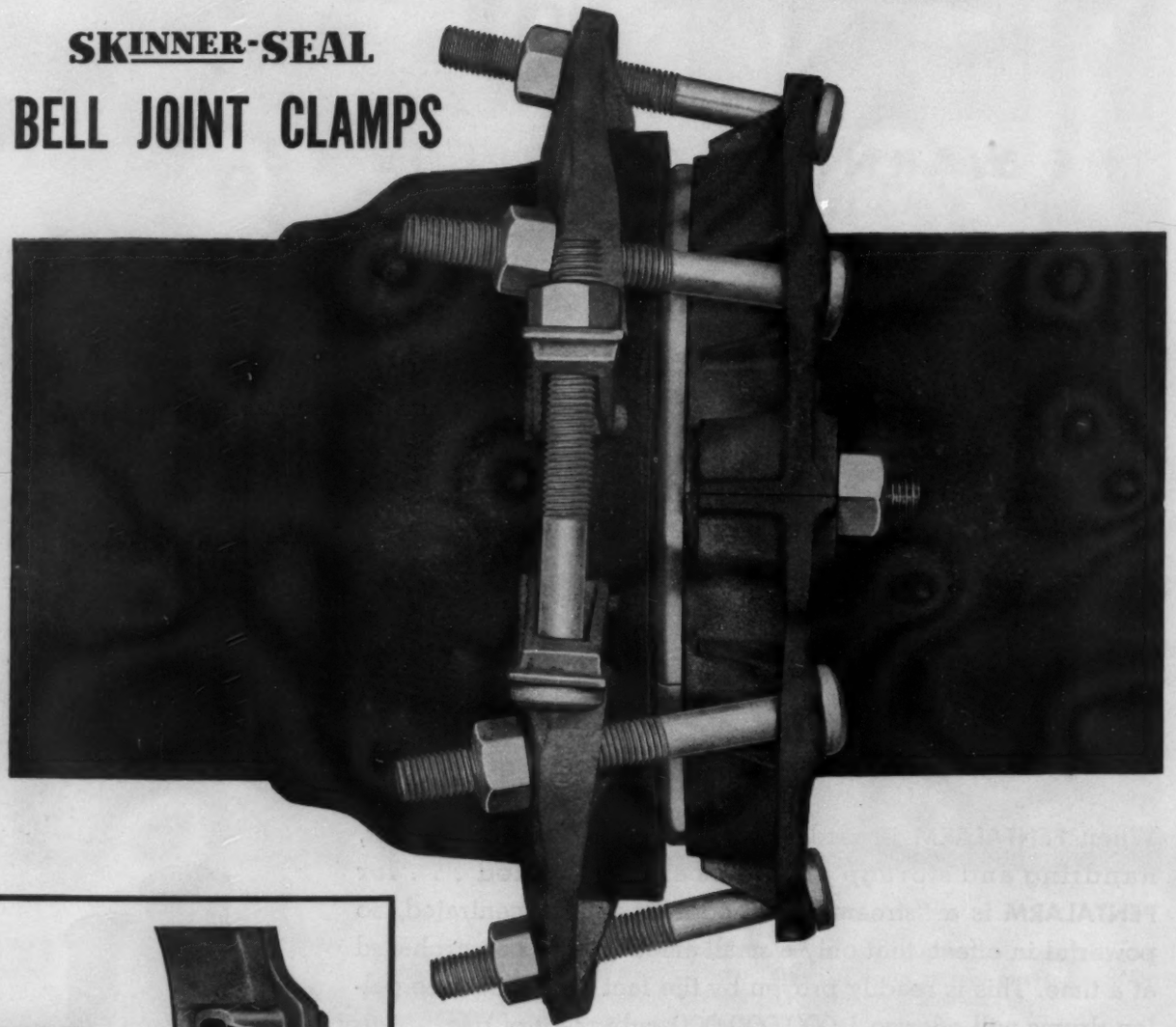
Pentalarm Your Pipelines!

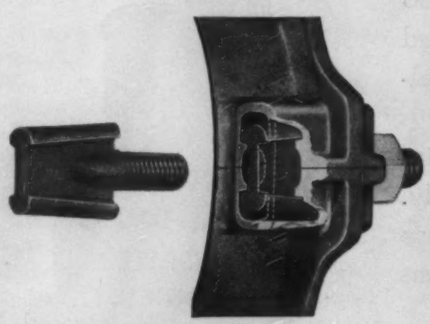
SHARPLES SOLVENTS

THE SHARPLES SOLVENTS CORP., 23rd and Westmoreland Streets, Philadelphia, Pennsylvania

THE ONLY BELL JOINT CLAMP WITH A SEALED GASKET

SKINNER-SEAL BELL JOINT CLAMPS





The new, patented Skinner Wedge Lock draws main ring together in perfect alignment . . . quick — and tremendously strong.

SKINNER BELL JOINT CLAMPS not only avoid delay and stop leaks instantly, under pressure; they also — by introducing an element of flexibility which prevents future trouble — form a lasting repair. The soft rubber gasket is completely SEALED by monel metal band at bell face and hard vulcanized gasket tip at spigot. Pressure is sealed in; air, moisture and gasket-destroying soil conditions are sealed out! Complete adjustability for variations in pipe diameter reduces number of clamps you have to carry on hand. Speedy, one-man application cuts job costs.

M. B. SKINNER CO. *Est. 1898* **SOUTH BEND, IND.**

THE words "and Foundry" in our corporate name mean that we have exceptional facilities, recently augmented by an addition to our Chattanooga plant, for the design and production of large special castings and special fittings. Primarily devoted to the requirements of water purification, sewage treatment and gas plants, these facilities also serve the needs of sugar, chemical, paper-making, fertilizer and other industries. Your inquiries are solicited.

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U.S. cast iron PIPE

SUPER-DE LAVAUD CENTRIFUGAL CAST IRON PIPE

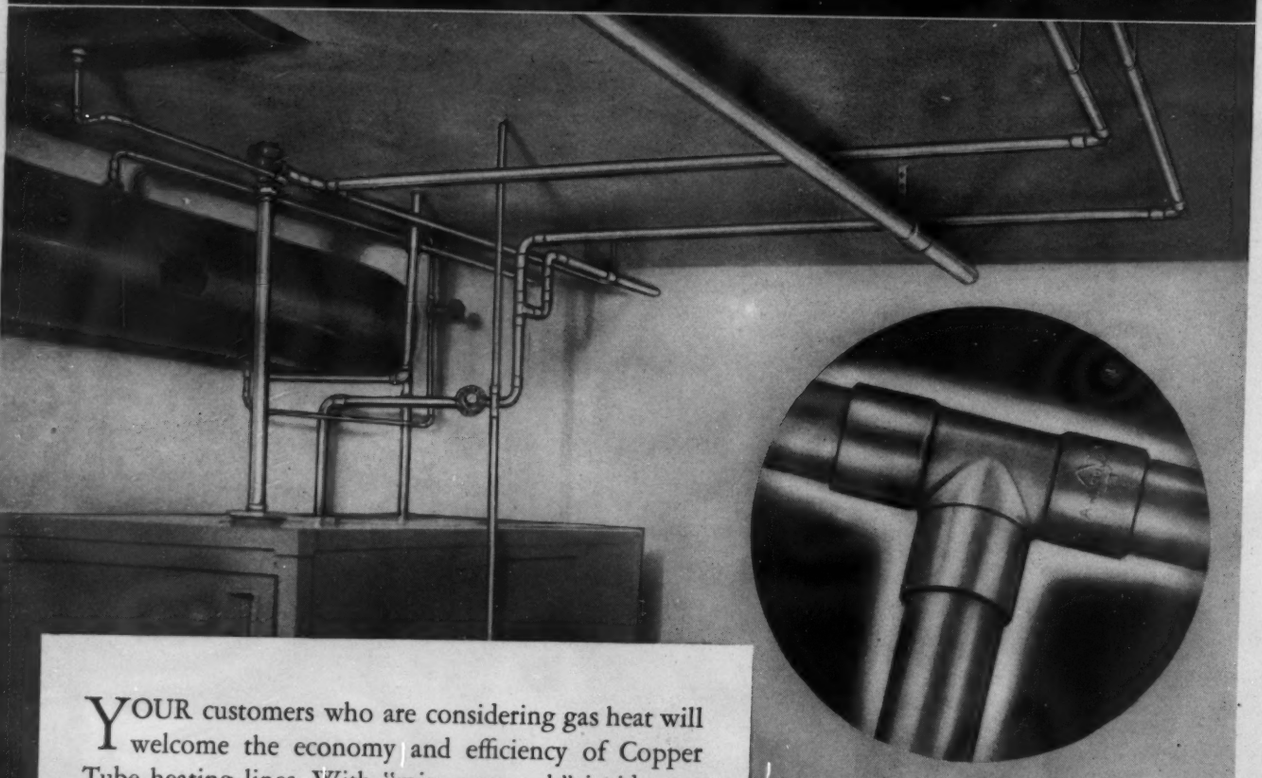
U. S. Pit Cast Pipe U. S. Mechanical Joint Pipe
U. S. Threaded Cast Iron Pipe
U. S. Ni-Resist Cast Iron Pipe
U. S. Flexible Joint Pipe U. S. Cast Iron Culverts
Alloy and Gray Iron Castings
U. S. Cast Iron Roof Plates

Cast Iron Pipe, centrifugally or pit cast, for water works, gas, sewerage, drainage and industrial service.

U. S. PIPE & FOUNDRY CO.
BURLINGTON, NEW JERSEY
Foundries and Sales Offices throughout the U. S.

COPPER TUBES for Hot Water Heating Lines

Reduce Resistance to Flow... Improve Gas Heat Efficiency



YOUR customers who are considering gas heat will welcome the economy and efficiency of Copper Tube heating lines. With "mirror-smooth" inside surfaces, and assembled with solder fittings, resistance to flow is *decreased* by 10 to 15% in forced circulation systems. This means maximum heat to the radiators in the least possible time.

And here's *good news*—a Copper Tube installation now costs only a little more than one of steel. Yet Anaconda Copper Tubes and Fittings are a lasting investment.

Consider how attractive a basement recreation room can be when copper tubes, polished and lacquered, are used for heating lines... their neat appearance in keeping with the immaculate gas heating unit. Furthermore, less heat is lost, and what little is diffused helps to keep an even warmth in the recreation room. 3853

To sell your customers on Copper Tubes, get all the facts on their economy and efficiency—write for our booklet on Heating Lines. There's no charge, simply fill in the coupon and mail.

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Company _____

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from mine to consumer

Anaconda Copper & Brass

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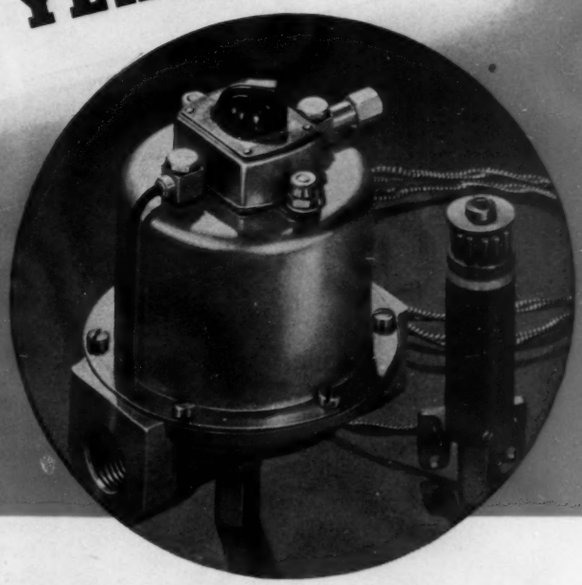
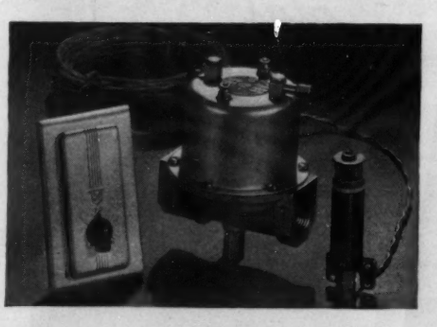
HERE IT IS!

GREATEST GAS CONTROL NEWS IN 20 YEARS!



GAS-ACTUATED AUTOMATIC GAS CONTROL



GAS ACTUATED PACKAGE SET

The General T-85 Package Set combines the new General B-60 series valve, flush thermostat for remote control, pilot generator and 40′ of wire. The thermostat, an entirely new departure, projects only 1" off the wall, including the knob.

NO ELECTRICITY NEEDED

This new General Space Heater Control provides all the advantages of electric control yet it is completely gas operated!

The General B-60-4 automatically controls the room temperature—the total differential of the thermostat is ½°F—an extremely important feature in controls mounted close to the floor! It also provides positive safety pilot control—the gas valve automatically closes if the pilot light fails. Operation is silent—no noise in starting, stopping or operating. The B-60-4 generates its own current to operate the valve through the use of a pilot burner generator!

In other words, this newest "General" brings dependable automatic heat within the financial means of tens of thousands of small home owners! The first cost is low and the self-contained unit can be installed by the gas fitter.

New Operating Principle

The pilot burner generator is small but highly efficient. The thermocouple principle, heretofore considered only powerful enough to operate instruments, has now been brought into its own as an automatic valve operator.

The gas-actuated diaphragm type main valve is pilot-operated by a sensitive pilot-valve, exclusively developed by General Controls, having a 3-way action in which bleed gas occurs only during the opening cycle for about one second.

Tested and Performance Proved

The General B-60-4 has been subjected to severe tests in the laboratory and on several closely watched home installations, equalling years of operation. The performance was 100% positive.

Send for *New* Bulletin

A new bulletin has been prepared giving complete information on the General B-60 series. A copy may be had by writing the General Controls Co., 450 East Ohio St., Chicago, Ill. Direct factory branch offices in New York, Cleveland, Chicago, Houston, Los Angeles

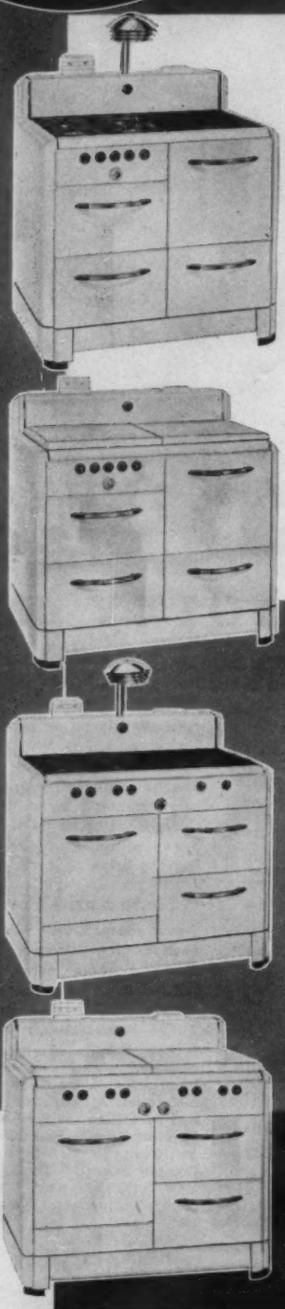
A product of **GENERAL CONTROLS**

UNIVERSAL

cp

puts the accent on

Cooking Performance



MARLBORO UNIVERSAL
Four Burner—18-Inch Oven—Table Top Gas Range—Flush to Wall Construction.

OXFORD UNIVERSAL
Four Burner—18-Inch Oven—Table Top Gas Range—Flush to Wall Construction.

DALTON UNIVERSAL
Four Burner—Elevated Broiler—18-Inch Oven—Table Top Gas Range—Flush to Wall Construction.

STRAND UNIVERSAL
Six Burner—Double Oven—Table Top Gas Range—Flush to Wall Construction.

• Universal Gas Ranges are engineered to meet the specific requirements of the gas utility company from three distinct viewpoints . . . utility sales promotion—consumer satisfaction—and elevation of gas service to its highest plane of convenience and modernity. C. P. Universal Ranges not only meet every C. P. specification, but in addition, offer features that go beyond specified requirements. C. P. Universal Gas Ranges are distinguished by their "flush to wall" construction. They make possible the most economical, healthful, modern methods of top burner cooking, with absolute certainty as to results. They simplify oven cookery and make broiling one of the easiest of all methods of food preparation. The Universal Gas Range definitely puts the accent on Cooking Performance, and a Universal installed in the consumer's home means that the gas utility is putting its best foot forward from the standpoint of guaranteeing the consumer the highest standard of efficient, economical gas service.

ADVANCED DEVICES GUARANTEE THE UTMOST IN EFFICIENT OPERATION

plus

BETTER COOKING RESULTS!

SIMMER-SAVE BURNERS—gives a controlled boiling heat at click of valve.

PRECISION OVEN—give balanced, uniform heat distribution.

EQUALATOR PRECISION OVEN BURNER—gives speed plus low oven temperatures.

SUPER-INSULATED OVEN—gives greater fuel economy plus greater comfort.

IN-A-DRAWER BROILER—pulls out like a drawer—makes broiling easy.

SAVORY SMOKELESS BROILER GRID—assures smoke-free, spatterless broiling.

Universal Gas Ranges

MANUFACTURED BY

CRIBBEN & SEXTON CO., 700 N. Sacramento Blvd., Chicago, Illinois

GAS
July, 1938

Guest Editorial

More *Sales* Mean More *Jobs*

By DAVIS M. DE BARD

**Vice President Stone & Webster Service Corporation
New York, N. Y.**

BACK to work on the problem of sales distribution is a movement needed in our country today. If every man and woman in the promotional field would forget national problems, national politics, and direct his organization to make more calls, more hours, more days per week, it is certain that more sales and more jobs would result. There was never a time when the farm products of our country were so plentiful; when manufacturers were in such a splendid position to produce goods useful and necessary to our citizens; when the banks were so plentifully supplied with money to be invested at reasonable rates of interest. Yet, we are in a period of recession, so called. The arteries of distribution are not functioning. This situation can be compared to that of a man with good blood but with hardening of the arteries. The blood will not revive his energy until it is permitted to circulate.

What can we do about this recession? Watchful waiting will not get us anywhere, nor will high hopes for better times. The answer is more planned distribution in every line of business. Recently, at a utility sales meeting, the high man for the past month was asked to stand. The question was asked him, "Why were you the winner?" His answer was, "I was a new man in my territory last month and I thought every home was a good prospect for my utility appliances."

For the last few years business has been very good in Sweden. On a visit to that country, I found residential building going forward at an exceedingly rapid rate, and contributing largely to the business boom. The working people could go to their local bank, secure a mortgage amounting to 85 per cent of the home cost, which was to be amortized over a period of 25 years. The government insured the mortgage to the bank. Interest rates were low. The worker, with the aid of his friends on a cooperative basis, constructed the house under supervision of a bank or government building inspector. The building of houses in the $3000 to $5000 class was going forward at a rapid rate, in fact, so many new houses have been built in the past few years that it is very difficult to find any old and dilapidated areas. All lines of business were prospering due to this building program. I found no unemployment, no beggars, no relief problem—a people well fed and well clothed. They were not only working at their regular job during the day but overtime during the summer months in home building.

What a great thing it would be if individual initiative could be stimulated in the United States so a similar building boom for the $3000 to $5000 house could be accomplished.

A great opportunity is open to the sales managers of every gas company to plan better and to stimulate, not only through campaigns of their own, but also by inspiring other lines of business to do likewise. Sales organizations must be enthusiastic and must get this enthusiasm from the top down. Enthusiasm is contagious. Make your own campaigns effective and other lines of business will imitate and confidence will return, commodities will start to move—*Sales Mean Jobs.*

In Oklahoma, as in the other great oil and natural gas states, technological demands on instruments yearly grow more exacting. Note that you see an ever-increasing predominance of **METRIC-AMERICAN** and **WESTCOTT-AMERICAN** Orifice Meters and Flowmeters . . . whether at compressor stations, metering high-pressure gas for well-drilling . . . measuring gas or oil flowing from wells . . . at gasoline plants, metering gas from compressors to absorbers. Where accuracy and stamina of instruments count most in oil and gas production, distribution and refining . . . **METRIC** and **WESTCOTT.**

Bulletins on Integrating, Recording and Indicating types of Orifice Meters and Flowmeters explain how American Meter Company is keeping pace. (N. B.-Refineries, in particular, will be interested in the new **METRIC** Air-Actuated Remote Recorder and Controller. Specifications upon request.)

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GAS

FOURTEENTH YEAR OF PUBLICATION

Thermally Thinking

By Stanley Jenks

Editor

Water Heating Sales Gains

There are high spots at all conventions, incidents or circumstances that arise, never to be forgotten. Such a high spot for me was at the Indiana Gas Association Convention at Gary, May 16, when I sat in the sales symposium of the commercial section conducted by C. V. Sorensen. Around New York, the dismal Daniels have howled so loudly and the city streets are so indigo shadowed that you expect to be pinched as a disturber of the peace (which honest-to-goodness passes all understanding) if you laugh aloud. I know some men in New York who would get lockjaw if they smiled. And, therefore, when somebody in this symposium asked for a show of hands by all, whose automatic water heater sales were ahead of last year, and the whole roomful stuck up their hands—I, from the land of the sky-blue quotas, felt my heart gave an extra beat. It was the big thrill of the convention.

Concerning the Gas Clothes Drier

Now that the A.G.A. Laboratory has formulated specifications for the gas-fired clothes drier, and thereby opened up another major use for gas in the home, it is to be anticipated that there will be some definite sales promotion in this field. In fact, there has been. My host, when I was in Indiana recently, had one installed in his basement, and it was proving more than satisfactory, it was saving money. The laundress had been able to cut half a day off her previous time in handling the family wash, thanks to the gas clothes drier. In Chicago, I saw models displayed on the sales floor, and F. X. Mettenet told me they had already installed better than one hundred. A popular-priced gas clothes drier has three reasons for being in our promotional picture. For the customer, it saves money, time and labor. For the gas company, it increases our usefulness to our customers, which, when all is said and done, is our basic reason for existing, and while directly building the load, it augments it further by keeping the laundry work at home and increases the cooking and hot water usage.

Gas For Cooking

Of late, prompted largely by the forthcoming advent of the C. P. Range, several prominent combination gas and electricity executives have strongly endorsed the modern gas range as being much better in every respect . . . . that is, from the customer's and the company's viewpoint . . . . than its electrical compere. At the recent Production and Chemical conference in New York City, A. M. Beebee, general superintendent, Rochester Gas & Electric Corp., in his paper "Time Marches on, where is manufactured gas marching," just about put the clincher on the argument, if argument it may be considered. Mr. Beebee, a combination operating executive, and without the bias one might ordinarily expect from a straight gas salesman, used the modern gas range as his gage, and when he was through picking the electric range apart, it was nothing but a very poor substitute for what we have to offer. After showing how a modern gas range properly installed can cook and broil cleaner and cooler, and on the average, at about half the cost, Mr. Beebee gave us some operating technicalities that are most interesting.

"Modern electric ranges," he said, "to equal gas range speed, have a connected load of 10 to 11 kw., or the equivalent to a 15 hp. motor. The output of an electric range is a function of the square root of the voltage, and therefore it is most expensive to handle adequately loads of such poor load factor. It is particularly so, if uniformity of voltage is to result in order to avoid flickering lights, and provide the much touted 'uniform' cooking. The economic fundamentals are definitely on our side, because in the case of gas ranges, the output is a function of the square root of the pressure. Therefore, variations in gas pressure affect the operations of gas ranges only one-fourth the extent the variations in voltages have on electric ranges. In addition, the oven temperatures of the modern gas range are far more uniform than in the modern electric range. Try it . . . . we did and the results are astounding. With the 'on and off' operation of an electric oven . . . . we found variations of from 50 to 80 degrees in the highest grades of electric ovens, as contrasted with two to three degrees variation in the gas ovens, which completely accounted for the lack of uniform results which our

home service girls claimed with electric ovens as contrasted with gas ovens . . . . The heat distribution in a modern gas oven is most remarkable, showing only a degree or two variation at any one point in the oven, as compared with other points.

"Therefore, when talking about modern time-temperature-carefree-cooking, the advantage is all on our side. Electric enthusiasts, basing their experience on old gas ranges, are prone to doubt these claims, but don't let them fool you. A careful study will convince you of the rapid strides made in gas appliances, so that we need have no fear that the gas range in the kitchen is not to the customer's best interest, for the economy of operation is beneficial to all.

A fitting comment of the importance of the initial bow of the C. P. Range, and a timely reminder, that the sooner we can get the older, less efficient gas ranges replaced with our modern types, the surer becomes our position as the nation's cooking service.

A Motion Picture To See

"White Banners," Warner Bros.' picture version of Lloyd C. Douglas' best-seller of the same name is a moving picture that every gas man and his family should go out of his way to see. I saw it recently, and everything laudatory that Jimmy Fiddler, Walter Winchell and the other critics have said, is an understatement as far as I, a member of the gas industry, am concerned. "White Banners" is a full length, 90-minute feature picture, and represents intensive drama in the life of a midwestern professor and inventor, who saw his electrically-driven refrigeration system stolen from him, but is persuaded to fight on and win the final victory by inventing a better refrigeration system—Yes sir! The gas refrigerator.

You are probably wondering why the staid old editor of GAS is raving to such lengths about a mere moving picture. Folks, this isn't a mere moving picture at all. It is a "natural" for the gas industry. It is estimated that 40 million Americans will see this picture, and when they do, they will see worked out before their eyes one of the gas industry's miracles.

Heating Plans Now

It is pretty bad to think about heating sales plans in midsummer as the sun sets the sidewalks a-shimmering, but in these highly competitive days, when haphazard selling is doomed to failure, smart sales managers and sales promotion men are already laying their "quota-busting" plans for the forthcoming heating season. In the manufactured gas field especially, this is where the real battle of the fuels is being fought, and the headway that is being made is shown by an increase in sales for home-heating of 256.3 per cent since 1929. But, with all due respect to the lads on the firing line, the field is scarcely scratched, generally speaking. Many companies are doing splendid jobs, but almost invariably we are out-manned and outmaneuvered by our fuel competitors, whose strength has been quantity rather than quality. We hear that the oil burner people are planning to budget $3,000,000 to promote their unit through their association. The coal-stoker men are on the warpath with sales promotional dollars and manpower. We cannot tilt at this competition with a lance like Don Quixote charged the windmill. We need modern weapons, which are available, and then a plan of action that leaves nothing to chance, wastes no motion, and that will stand no interference until it is an accomplished fact. Such plans require market study, carefully trained and well led sales organizations, neither of which can be produced overnight. That's why our alert, aggressive sales executives are laying their heating sales plans now.

California Seasonal Load Variations

In our May issue, there was a misstatement, or rather an erroneous conclusion, in the article "A Tale of Seven Cities" by H. J. Struth. After Mr. H. L. Masser, executive vice-president of the Southern California Gas Company quite rightly called it to the author's attention, Mr. Struth has asked that we publish a correction. Mr. Struth stated that there was practically no seasonal variation in the domestic gas load in California, and admits, lacking the comparative gas consumption data for California and Ohio, his conclusion was based upon monthly statistics of natural gasoline operations, which show no seasonal variation. But, after seeing consumption charts furnished by Mr. Masser, he concedes that the production and consumption of dry gas is a dominating factor which eliminates natural gasoline operations as an index of California's gas consumption.

This is especially true of Southern California, states Mr. Masser, where the variation in monthly output between January and August is in the ratio of about 3.5 to 1.0. In 1937, when Southern California had a very cold winter, the range from winter peak days to summer minimum days was in a 6.5 to 1.0 ratio.

At Mr. Struth's request, GAS is glad to make the correction, and thanks Mr. Masser for calling it to our attention.

Conventionitis

From May 3 to May 27, a period of 24 days, there were seven important conventions or sales conferences in which gas men were intensely interested. All of them offered programs of constructive merit. Two of them were state gas associations in Pennsylvania and Indiana. Another was the annual convention of the Natural Gas Department of the A.G.A. at New Orleans. Three of them were conferences in New York City, two of which were national in scope and the other a New York-New Jersey Regional sales conference. The other was the annual convention of the A.G.A.E.M. at White Sulphur Springs. In one instance there was a definite time duplication whereby it would have been impossible to be at both, no matter how interested you might be in them. The full potentialities of these meetings are not realized when counter-attractions reduce attendance, and for those who do not attend, but rely on the printed papers for knowledge of the latest developments and ideas within the industry, the jammed schedule is reflected in a formidable pile of papers that ought to be read, but rarely are, under such conditions.

I know it's a big problem, but I feel a little coordination would go a long way to solving it.

PRESENT DAY REGULATION OF NATURAL GAS UTILITIES

By ALEXANDER M. MAHOOD

President, National Association of Railroad and Utilities Commissioners

THE FEDERAL BUREAU of Mines reports that more than two trillion cu. ft. of gas were produced in the United States in 1936, that this total represented a gain of 13 per cent over 1935. During 1935, natural gas was produced in 21 states, marketed in 35. At the close of 1936, the industry was selling natural gas to 8,674,000 domestic and commercial customers, an increase of 670,000 over 1935 and of 1,750,000 over 1931. Such growth naturally has brought problems in regulation, and Mr. Mahood summarized these, in a paper, "A Few Thoughts on Present Day Regulation of Natural Gas Utilities," which he presented before the American Gas Association Natural Gas Department Convention in New Orleans, La., May 9-12. Portions of Mr. Mahood's paper are presented herewith.—Editor.

REGULATION of the natural gas industry is not susceptible of local state regulation alone. With long transmission lines transecting the nation it has become national in character and many of the problems can be solved only by a federal regulatory commission with powers to regulate the transmission of natural gas in interstate commerce. Such regulation, however, should be limited to interstate transactions and should not attempt to deal with local consumer rates and services. The federal government should not be permitted to encroach upon the sovereignty of the states in the regulation of their internal affairs, and rates for consumption, whether it be domestic, commercial, or industrial, should be under the complete and sole supervision and jurisdiction of the local state regulatory agency.

It is readily appreciated that many governmental functions, regulatory or otherwise, of necessity must be administered from Washington for the plain reason that such functions are national in character and form an integral part of the commerce between states, but these reasons cease to exist when we are faced with matters purely local in character, of only local interest, even though such matters in many instances are technically interstate or affect interstate commerce, and Congress, by virtue of the broad powers of the commerce clause of the constitution could, if it saw fit, delegate the administration of such matters and functions to a federal agency.

This reasoning dates back to the decision of the United States Supreme Court in *Cooley* v. *Board of Wardens*,[1] in which case the Court, in dealing with a statute enacted in 1789, held that matters not in their nature national and hence requiring a uniform rule, but local in character, and hence appropriate for local regulation, although within reach of Congress because involving or affecting interstate commerce, might be regulated by the states till Congress should exert its power. This rule has been applied by the Court in many cases since; notably in the *Minnesota Rate Cases*[2] decided June 9, 1913, and in the *Pennsylvania Gas Company Case*[3] decided January 28, 1919, which involved the transmission of natural gas from producing fields in Pennsylvania into the City of Jamestown, New York, for resale. The Court in the latter case, following the rule laid down in the *Cooley Case* and the *Minnesota Rate Cases*, upheld the right of the state of New York to regulate the rates for which such gas was sold in Jamestown, among other things, saying:

"It may be conceded that the local rates may affect the interstate business of the company. But this fact does not prevent the state from making local regulations of a reasonable character."

Attention is called to these court decisions to present the background and limitations of the bill now pending on the Senate calendar to regulate the transportation and sale of natural gas in interstate commerce, commonly known as the Lea Bill.[4]

This type of legislation has been before Congress in one form or another for the past 10 or 12 years. It vests in the Federal Power Commission complete regulatory jurisdiction over the transportation and sale of gas in interstate commerce, but limits that authority to sales for resale. Section 1 of the bill provides that the "Act shall apply to the transportation of natural gas in interstate commerce, to the sale in interstate commerce of natural gas for resale for ultimate public consumption for domestic, commercial, industrial, or any other use, and to natural gas companies engaged in such transportation or sale, but shall not apply to any other transportation or sale of natural gas or to the local distribution of natural gas or to the facilities used for such distribution or to the production or gathering of natural gas." This leaves to the state commissions complete jurisdiction to regulate sales within their boundaries for domestic, commercial, industrial, and other purposes.

The report of the House Committee on Interstate Commerce[5] approving this bill, accepted by the Senate Committee,[6] states that: "There is no intention in enacting the present legislation to disturb the States in their exercise of such jurisdiction," referring to jurisdiction over local rates, and further states that it was the intention to regulate the so-called "wholesale sales" in interstate commerce which are not at this time subject to state commission jurisdiction by reason of their interstate character and the decisions of the United States Supreme Court in the *Missouri* v. *Kansas Gas Company Case*[7] and the *Attleboro Case*.[8]

These limitations upon the powers

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[1] *Cooley v. Board of Wardens*, 12 Howard 299.
[2] *Minnesota Rate Cases*, 230, U. S. 352.
[3] *Pennsylvania Gas Co. v. Public Service Commission*, 252 U. S. 23.
[4] H. R. No. 6585. (This bill was passed by the Senate, June 7, 1938 and returns to the House with minor amendments.—Editor.)
[5] House Report No. 709, 75th Congress, 1st Session, page 1.
[6] Senate Report No. 1162, 75th Congress, 1st Session, page 1.
[7] *Missouri v. Kansas Gas Co.*, 265 U. S. 298.
[8] *Public Service Commission v. Attleboro Steam & Electric Co.*, 273 U. S. 83.

of federal agencies were also written into the Communications Act of 1934, which restricted the powers of the Federal Communications Commission to purely interstate toll service and expressly excepted from its jurisdiction, rates, practices, and facilities of wire telephone exchange service, even though a portion of such exchange service may constitute interstate or foreign communication. And the Federal Power Act conferring jurisdiction upon the Federal Power Commission over the transmission of electric energy in interstate commerce restricts such jurisdiction to the transmission and sale of such energy at wholesale in interstate commerce, leaving to state commissions complete and sole jurisdiction over the rates to the ultimate consumer, and in section 210 expressly states "such federal regulation, however, * * * extends only to those matters which are not subject to regulation by the states."

Congressional Attitude

Having in mind the governmental philosophy of centralization of power it may seem surprising that concerning such vital subjects as natural gas, telephone and telegraph, and light and power utility services, Congress has not attempted to encroach upon the powers of the states to regulate and control the sales of such services to the ultimate users. The provisions of these acts limiting the jurisdiction of the federal agencies and preserving to the states the right to regulate their internal affairs were sponsored by the National Association of Railroad and Utilities Commissioners and it is gratifying that our recommendations have received the approval of Congress. I attribute these, what I believe to be desirable results, to the decisions of the Supreme Court, that it is in the public interest that local matters be administered by local bodies, and to the efficiency and integrity of state commissions and their staffs throughout the land. The national law makers and the public utility industry have confidence in state commissions and the proposals of our Association were for that reason not bitterly contested.

Forty-three states of the Union and the District of Columbia have jurisdiction over natural gas utilities.[9] The statutes delegating such jurisdiction are in the main broad and include rates, services, facilities, and accounting. The regulation of the gas industry and the peculiarity of the problems involved call for close mutual understanding and cooperation. State commissioners must be honest, fair, unbiased, unprejudiced, and free from political influence. It behooves the industry to see that such commissioners are placed in office and that new regulatory statutes or amendments to existing statutes are not primarily for its interest or profit but in the interest of the consuming public. The regulation of public utilities is a legislative function and the actions and orders of a state commission are legislative in nature. State and federal commissions should not be subservient to, or hampered or handicapped by, the other branches of government. They must be kept legislative.

The industry has the responsibility of being able at all times to deliver to users of its service a continuous and adequate supply of natural gas. With this responsibility there also comes the question of who should pay for the development of gas reserves. Should such reserve acreage be a part of the value upon which a gas utility is entitled to earn a return? Should the carrying charges, that is delay rentals, be charged to operating expenses? Should exploration costs be allowed as an expense, capitalized or amortized over a term of years? The treatment to be accorded these costs has received, and is now receiving, the attention of the representatives of the industry and state commissions in those states that have utilities under their jurisdiction producing, conveying, and distributing natural gas. They present real problems since such costs represent substantial sums of money and are indeed troublesome in proceedings involving consumers' rates.

Other Problems

There are other industry matters that are receiving constructive attention, such as conservation of natural gas supply in those states where the gas fields are old and there are limited reserves; proration of natural gas production where there is an abundant supply; the capitalization of long transmission lines; the allocation of their value and costs among the several distribution centers; the economic problem of extraction from natural gas of its higher chemical constituents, such as gasoline, ethane, methane, propane, butanes, and pentanes, and using the stripped gas for fuel purposes. This matter is now receiving the attention of the Public Service Commission of West Virginia,[10] of which I am a member. Then there is also the question of the effect of taxes and increased operating expenses on rates.

An expression of a few thoughts on some of these problems as they are affected by present day regulation seems in order, for instance, leaseholds and delay rentals.

Lease Holds, Delay Rentals

From the regulator's viewpoint the ascertainment of fair value and accounting rules and requirements are closely akin. The latter is a topic of intense interest in that the Accounting Committee of the National Association of Railroad and Utilities Commissioners has under consideration proposed revisions and modifications of the Uniform System of Accounts for Gas Utilities recommended for state adoption by the Association at its 1936 convention.[11] Accounting rules relating to leaseholds and delay rentals are receiving attention.

I am a true convert to the doctrine that effective regulation can be had only through the medium of systems of accounts and annual reports taken therefrom that accurately and fairly reflect the cost of the utility plant and the cost of operation. But I cannot agree with those who take the position that it is practicable now that the books of a utility be so kept and reports so made to a regulatory commission that such commission can, by looking only at a certain page in the report, without further ado, conclude that the rates of that utility are unjust and unreasonable or otherwise. If this could be so, one could happily say that the millennium was here. This goal may eventually be reached, but it is not in the cards today. Adjustments will more than likely always have to be made to book entries and filed reports. What the books and reports should reflect, however, is costs in sufficient detail and description so that the commissions and its employees may be able to determine the use made of the utility's plant, its cost, and the annual outlay for expenses.

Some commissions, their accountants, and statisticians take the position that for accounting purposes the cost of operated leaseholds only should be capitalized and that delay rentals should be excluded from operating expenses. Those of this group base their reasoning upon decisions of the United States Supreme Court in the *Dayton Power and Light Com-*

[9] *Aspects of the Organization, Functions, and Financing of State Public Utility Commissions*, by C. O. Ruggles, Harvard University, April, 1937.

[10] *Public Service Commission of West Virginia Natural Gas Survey—1936.*

[11] N. A. R. U. C. Proceedings 48th An. Con. 1936, page 52, N. A. R. U. C. Proceedings 49th An. Con. 1937, page 493.

pany Case[12] and the *Columbus Gas and Fuel Case*[13] handed down in the spring of 1934. I have carefully read these decisions and in my opinion they do not support such a conclusion. In the *Dayton Case* the Public Utilities Commission of Ohio fixed the value of operated acreage at $25 per acre.[14] This was substantially lower than the testimony of market value, which the Commission criticized and refused to accept, and higher than book cost. The Supreme Court, on a question of evidence, affirmed the Commission's finding, which finding had been disapproved by the court of last resort in Ohio.[15] The Commission disallowed delay rentals as an operating expense. The Supreme Court affirmed the Commission's action, stating that the annual amortization allowance of $4,159,954, which the Commission had allowed, created a fund sufficient "whereby new leases can be acquired and paid for out of current earnings." Can it be said that that decision supports the views of this group? Can it be said that the Court would have reversed the Commission if it had allowed delay rentals as an operating expense and had fixed the amortization allowance at a less amount? Can it be said that the Court would have reversed the Commission if it had included unoperated acreage either in whole or in part in the rate base? And the same deductions may well apply to the decision of the Court in the *Columbus Case*, except in that case the Court went somewhat further.

Opinions Vary

Some authorities voice the opinion that the cost of operated acreage only should be capitalized and that the utility should be allowed as an operating expense royalties and delay rentals on such leases and other leases that are necessary to protect such acreage. Others say that the utility should be permitted to record the actual cost of operated and unoperated leaseholds in its fixed capital accounts and record delay rentals and royalties as operating expenses, that by so doing the books will reflect a true picture of the utility's affairs. They further say that accounting rules should not be confused with rate making; that a commission in a rate proceeding can throw out of the rate base all or part of the unoperated acreage and disallow as an expense any or all delay rentals, but that from an accounting standpoint such costs, being actually incurred, should be so recorded.

Many natural gas utilities in recent years, in proceedings before commissions involving their rates and charges, have claimed as part of the fair value of their property the market value of their leaseholds on operated and unoperated acreage. They have further claimed that there should be included, as a part of their legitimate operating expenses, royalties and delay rentals. Many such utilities have based their contention for the market value of leaseholds upon the decision of the United States Supreme Court to the effect that the burden of proving greater present day value of gas fields above costs is upon the utility, but if such value is proven by clear, convincing, trustworthy evidence it must be included in the rate base.[16] The Court in the *United Fuel Gas Company Case*[16] in substance said that book value which is the same as actual value may be accepted, not as evidence of real value of a gas field but as an assumed value which on the evidence in that case could not reasonably be fixed at any higher figure. These utilities, in substantiation of their claim that delay rentals are legitimate operating expenses, say that it is necessary for them to hold reserve acreage in order to be in position to meet the future needs and requirements of the public; that it would not be practical, and they could not carry as much acreage as in their opinion is necessary to assure a future supply of gas to their customers and pay the carrying charges out of surplus or net earnings. They also say that if they are required by commission rulings, either in valuation cases or accounting orders, to delete from expenses such carrying charges, and are thereby forced to surrender what in their judgment is potential gas producing acreage, such acreage may be gobbled up by industries engaged in private enterprises and that in future years when their supply of gas dwindles and they need such acreage they would be unable to purchase it and could not force such private concerns to sell them gas in order that they may supply their regulated markets, and that only by holding such reserve acreage can they be assured of a dependable supply of gas for future public consumption.

THE AUGUST ISSUE OF

GAS

will feature a series of articles on the Certified Performance Range.

CP

Coinciding as it does with the announcement to the public of the CP Range Sales Campaign, G A S for August will stress particularly the value of the Range from a promotional and sales standpoint.

Utility sales managers are urged to place orders for extra copies of this issue immediately.

No Supreme Court Ruling

The Supreme Court of the United States has not said that leaseholds should not be included in the rate base at a value greater than cost. That court has not laid down the doctrine that delay rentals are not proper operating expenses. I have studied these problems and have been through several cases involving them. I cannot find that the Supreme Court has laid down any definite rule for evaluating leaseholds or the treatment to be accorded delay rentals, or how such items should be recorded on the utility's books. The most definite statement of the court is in the *Columbus Case*, wherein it said that delay rentals on unoperated acreage should be excluded from operating expenses unless such acreage is so near to the operated fields that it may be said by analogy to have the quality of working capital.

Many persons who are qualified to discuss these matters say that a utility should not be entitled to earn on enhanced value of leaseholds if the

(Continued on Page 34)

[12] *Dayton Pr. & Lt. Co. v. Pub. Util. Com. of Ohio*, 292 U. S. 290, 78 L. ed. 1267, 54 S. Ct. 647, 3 P. U. R. (N. S.) 279.
[13] *Columbus Gas & Fuel Co. v. Pub. Util. Com. of Ohio*, 292 U. S. 398, 78 L. ed. 1327, 54 S. Ct. 763, 4 P. U. R. (N. S.) 152.
[14] *Re Dayton Pr. & Lt. Co., P. U. R.* 1931A 332.
[15] *Dayton Pr. & Lt. Co. v. Commission*, 127 Ohio St. 137, 187 N. E. 18.
[16] *United Fuel Gas Co. v. R. R. Com.*, 278 U. S. 30, 73 L. ed. 390. *United Fuel Gas Co. v. Pub. Serv. Com.*, 278 U. S. 322, 74 L. ed. 402.

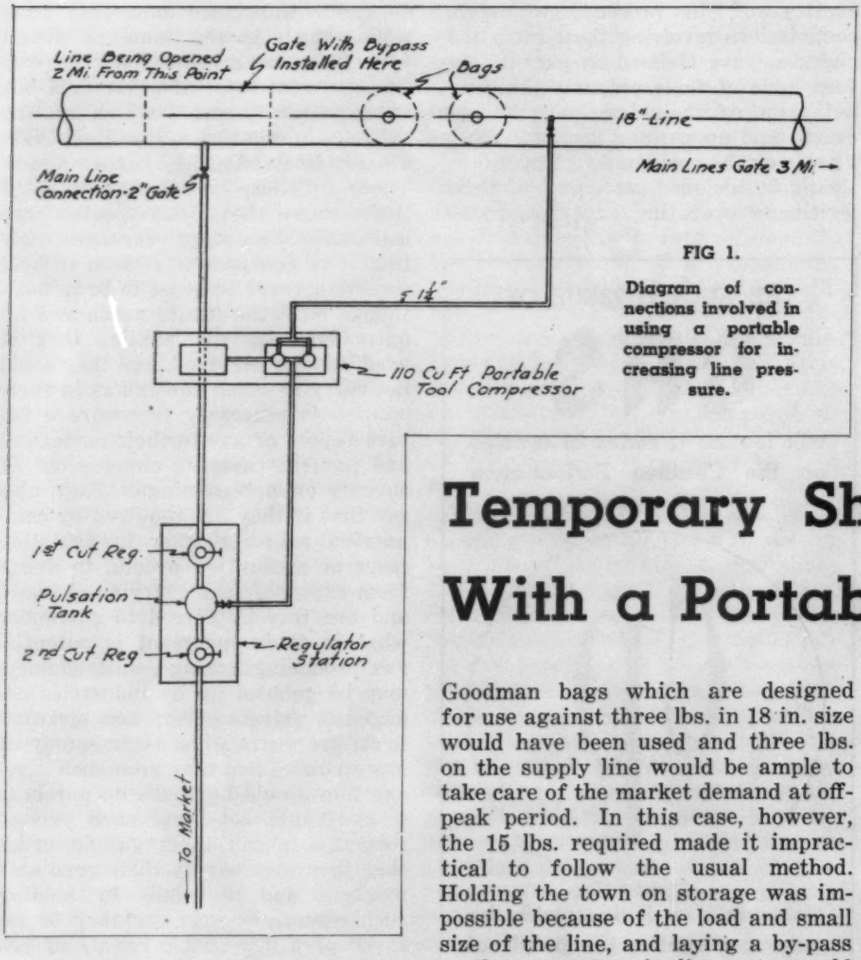


FIG 1.

Diagram of connections involved in using a portable compressor for increasing line pressure.

Solving a Temporary Shut-off Problem With a Portable Compressor

By G. S. BEITLER
Engineer, Pipe Lines Department
The Ohio Fuel Gas Company

IN some of the older pipe line systems it is frequently difficult to make changes involving shutting down the main line. This is especially true in those cases where it is desired to maintain service through small market lines directly connected to the main line, and where such connection is at a considerable distance from any main line gate.

Such a difficult situation was recently overcome through a plan worked out by George Offenburger, district foreman, Ohio Fuel Gas Co., and the writer.

It was desired to do some work on an 18 in. main line which involved taking it out of service for the installation of gas cleaning equipment. The problem then arose as to how to maintain service to a small town supplied through a two-in. line connected directly to the 18 in. main line in the section involved. Due to a foundry in the town which used a considerable quantity of gas it was necessary to maintain at least 15 lbs. pressure in the line.

Ordinarily in the case of a community of this size, the Gardner-Goodman bags which are designed for use against three lbs. in 18 in. size would have been used and three lbs. on the supply line would be ample to take care of the market demand at off-peak period. In this case, however, the 15 lbs. required made it impractical to follow the usual method. Holding the town on storage was impossible because of the load and small size of the line, and laying a by-pass to the nearest main line gate would have required several miles of pipe and involved much expense.

The solution, finally arrived at, was to bag the main in the usual manner, and to use an ordinary portable tool compressor (110 cu. ft. size) with the compressor air intake connected to the three lb. supply and the discharge connected to the receiver ahead of the last cut of the tandem regulator setting which normally reduced the main line pressure to the 15 lbs. needed on the market line. (See Fig. 1).

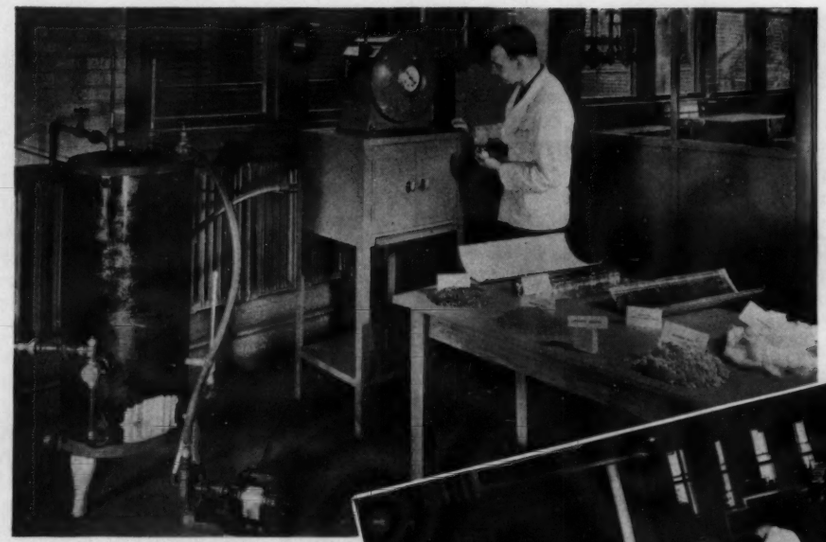
It was calculated that the compressor connected in this manner would handle approximately 8,600 cu. ft. of gas per hour which left an ample margin of safety above the quantity necessary to adequately supply the town. Before bagging the main line, however, and reducing pressure, the compressor was connected up and a trial run made by cramping the inlet gate to the compressor to maintain three lbs. intake pressure. Several weights were also removed from the first cut regulator so it would shut off. This test was carried on for a half-hour and proved satisfactory.

At the conclusion of the test the line pressure was lowered, the bags inserted and load again taken over by the compressor. The line then parted and a by-pass gate installation was made. Everything was carried out in a satisfactory manner and no interruption of service or other difficulties encountered. The market line was then connected to the by-pass and service at the usual pressure resumed. We then were able to go ahead with the cleaner installation located two miles away.

It has been found in using these

(Continued on Page 27)

FIG. 2. Crew of men screwing the bag assembly into the saddle.



ABOVE: Types of insulating material investigated by the A.G.A. Laboratories in conjunction with the domestic gas water heater research program. AT RIGHT: Conducting research on hotel and restaurant ranges leading to the development of revised approval requirements for such equipment.

● R. M. CONNER, director, American Gas Association Testing Laboratories, Cleveland, Ohio, in a paper, "Utilization Aspects of Natural Gas," presented before the American Gas Association Natural Gas Department Convention, New Orleans, La., May 10, 1938.—(Abstract by GAS).

Some Utilization Aspects of Natural Gas

TODAY natural gas is distributed in over two-thirds of our states and the whole gas industry takes pride in the achievements leading to such widespread geographical distribution and is grateful for the distinction these accomplishments have brought us. I am glad to be associated with an organization the leaders of which have always, since its inception, recognized the full importance of natural gas and foreseen its great future. The Association has not lost sight of the sovereignty of natural gas and has never failed to consider natural gas problems in its councils and actions.

The Testing Laboratories have always ensured equal attention to natural and manufactured gas utilization problems. Every appliance approved by the Association is tested on both manufactured and natural gases and must, of course, demonstrate satisfactory performance on each. Less familiar, however, are corollary activities of the Laboratories and the relation they have to the natural gas man, by virtue of their bearing on approval testing procedures and utilization matters in general.

The first topic of this corollary nature is the burning characteristics of high heating value oil gases produced as a substitute for existing supplies of natural gas. One of the first things that a natural gas engineer is interested in when considering supplementary supplies of this nature, is to know whether or not the interchangeability characteristics of such gases are such as to make satisfactory substitutes for natural gas. Our Laboratories, through their mixed gas research work, have developed a formula from which such information could readily be determined without resort to long, tedious and expensive field tests. The National Bureau of Standards has also developed a formula which checks very closely with ours. Most of the high heating value oil gases produced in carbureted water gas sets and ranging in heating value from approximately 950 to 1100 B.t.u. are generally satisfactory substitutes for most types of natural gas. Where any doubt, however, exists, it is recommended that those companies interested take such problems up with us. We will be only too glad to supply you with any information on this subject that we can.

Another subject of general interest is the Certified Performance Range program. Testing has been resumed and also our establishment has been of technical assistance to the committee developing the Certified Performance Range program all along. Hence, it seems reasonable to assume that these new super range requirements possess not only a sound commercial but technical background.

At the present time, the Association's approval and listing requirements enjoy practically complete coverage of the domestic gas utilization field. In addition, requirements are available for certain types of commercial equipment, notably hotel and restaurant ranges and industrial gas boilers. It should be of interest to note that steps have been taken to enlarge the scope of the Association's approval program in the commercial field. Committees have been appointed and other preliminary work completed toward the preparation of requirements for unit broilers, deep fat fryers, and several types of counter appliances. These specifications

will be similar to existing published standards in that they will constitute basic requirements for safe performance and other essential operating and constructional characteristics. It is confidently expected that the acceptability of commercial appliances will be augmented on completion of this program, in the same manner as approval has contributed to the acceptance of domestic appliances. It is to be noted that in preparation of new requirements of this nature considerable research work is necessary to permit establishing equitable limits and suitable test methods. In many cases, procedures established for conduct of approval tests subsequently become standard methods which are used by manufacturers to gage the progress of their development work and by utilities in checking equipment in which they are interested.

Types of Gases Used

One of the very important aspects of appliance testing is the type of gases available for such tests. Obviously, if there existed in the United States or Canada customers who were supplied a gas that imposed a more severe condition for appliance performance than any of the test gases utilized at the Testing Laboratories, then no assurance would be had that appliances approved on such test gases would perform satisfactorily everywhere in the field. But that is exactly how comprehensive it is desired that our approval be. Accordingly, our test gases must include a natural gas or gases which provide the most severe conditions from the standpoints of combustion, flame travel, lighting, and tendency to lift, and manufactured gases which are capable of imposing extreme conditions of flashback, noise of extinction, and combustion. It is, of course, not necessary that we employ gases representing the most extreme conditions since slight deficiencies may be compensated for by test pressures and limits. However, it is essential that the ideal conditions be as closely approached as possible. For this reason, before any approval testing was ever conducted, a comprehensive survey of gases and gas pressures throughout the United States and Canada was made in 1925. Other test gas investigations have been made since, one of which is now in progress. On the current research, Laboratories' representatives have made a rather extensive tour to study in the field the burning characteristics of all common types of city gases. These studies consisted largely of measuring by means of a special precision burner the basic burning characteristics of each gas under controlled conditions of gas and primary air flow. From these fundamental data it will be possible to determine whether our present test gases are adequate or whether they should be changed to meet contemporary needs.

From these primary functions of testing, certification, and research connected with requirements preparation and revision, the Laboratories activities extend into other fields. For example, rather extensive studies have been made during the past two years as a result of our Domestic Gas Research project which now includes studies of the basic performance characteristics of gas ranges and water heaters. The objectives of this work are to make available to the industry fundamental technical data on the mechanics of gas combustion and the most effective means of utilizing the heat liberated. Such data are of value to manufacturers and utilities alike in the solution of many problems. It is not intended that this work should in any way minimize or supplant efforts of manufacturers in product engineering and development. On the contrary, by making available these basic data on common problems it is felt that the manufacturer's research and engineering resources will be liberated from fields in which they are not ordinarily best equipped to function and concentrated entirely on vital appliance and accessory development. Of the many findings accruing to this project, I wish to mention two which probably are of more than usual interest to natural gas men. One which has found practical application on many types of ranges, was the burner design work leading to the development of the so-called low temperature oven burner. With equipment of this type and conventional graduating thermostat control it is possible to maintain oven temperatures on the order of 250-300° F. with natural gas and stable by-pass flames. Results of a different investigation which have been reported to the Committee on Domestic Gas Research but have not as yet been released to the industry will undoubtedly be of equal value. These data are those obtained from a thorough study of the factors of burner design affecting primary air injecting power of atmospheric types. Results obtained show how maximum air entrainment can be obtained on natural gas under various input rates and different size port areas.

Industrial Studies

Additional research activities are the fundamental studies on the combustion of gas for industrial heating processes. At the present time efforts are being concentrated on studies of gas combustion with a deficiency of air. Reducing atmospheres thus produced find widespread application in the industrial field, particularly in heat treating processes for ferrous and non-ferrous alloys. The objective of this problem is to analyze thoroughly the composition of flue gases resulting from utilizing varying ratios of air to gas and the effect of temperature, type of fuel gas, and other variables on the composition of the furnace atmosphere. Natural gas can, with proper control and under suitable combustion conditions, be successfully utilized for practically all industrial processes even those of the most delicate nature and requiring precise temperature control. For example, incandescent lamp works in Cleveland now utilize gas for cutting and forming operations of extremely delicate nature that formerly were thought feasible only with faster burning fuels.

One of the studies we have found most interesting has been the comparative tests of gas and electric ranges. Two such projects have been undertaken, the last of which was completed in 1935. While considerable advances have been made in both fields since that time, I feel qualified on the basis of the last major study and several subsequent informal tests, to express several opinions on the relative merits of the two types of ranges. The contemporary gas range is, without important exception, the superior

CALENDAR

July, 1938

Michigan Gas Association—Grand Hotel, Mackinac Island, Mich., July 1-2.

West Virginia Oil and Natural Gas Association—Charleston, W. Va., July 27-28.

September, 1938

Pacific Coast Gas Association—45th Annual Convention, Santa Barbara Biltmore Hotel, Santa Barbara, Calif. Sept. 14-16.

October, 1938

A. G. A. Twentieth Annual Convention—Atlantic City, N. J., week of October 10.

National Hotel Exposition—Grand Central Palace, New York, N. Y., Oct. 24-28.

National Metal Congress and Exposition—Detroit, Mich., Oct. 24-28.

November, 1938

American Petroleum Institute—19th Annual Meeting, Stevens Hotel, Chicago, Ill., Nov. 14-18.

December, 1938

National Exposition of Power and Mechanical Engineering—Grand Central Palace, New York, N. Y., December 5-10.

to its electric competitor in accomplishing the only practical purpose for which they are both designed, namely, the preparation of food by application of heat. It is faster; gas ovens of many models are as fast or faster than electric ovens; regular top burners having an average thermal efficiency are slightly faster than so-called "hi-speed" electric units under comparable and practical utilization conditions, while they simply cannot touch the speed of the giant top burners. It is important to emphasize that we generally give a consumer at least four regular top burners, each the equivalent of a hi-speed electric unit that usually sets alone on the electric range with two little brothers who have not yet grown to a point that they can do a day's work. Heat distribution in both top and oven, oven temperature control, broiling, and toasting are other characteristics in which the gas range generally possesses a measurable margin of superiority. The shrinkage myth has been exploded, this phenomena having been conclusively shown to be merely a function of temperature and entirely independent of type of fuel.

Data Available

Available at the Laboratories are considerable data on combustion characteristics of natural and other types of gases, particularly as they relate to appliance performance. These data resulting from our Mixed Gas Research Investigation and numerous subsequent studies are accessible to all member gas companies. Recourse to them has been had in many instances by those contemplating changes in characteristics of gas supplied or changeover from one type of gas to another. Naturally we will be only too willing to be of similar service to others. I have mentioned this phase of our activities since it is in this respect, aside from appliance and accessory certification, that we have felt our work to have been of greatest direct usefulness to member gas companies.

■ ■

Monongahela West Penn Co. Adds 981 Rural Extensions

The Monongahela West Penn Public Service Co., Morgantown, W. Va., added 981 rural line extensions to the company's lines during the month of April, 1938. According to company reports, these additions set an all time high for the number of extensions negotiated and new customers added for any single month by the Monongahela Co. The new lines involved 74 new extensions in the territory and the construction of 191.7 mi. of line for approximately $288,037.

How to Offer Home Service News to the Daily Papers

● **ELLA LEHR, director of home economics, Botsford, Constantine & Gardiner, in a paper, "Home Service as the Newspapers See It," presented before the Annual Northwest Conference of the Pacific Coast Gas Association, Portland, Ore., June 16 and 17, 1938.—(Abstract by G A S).**

WE in the gas industry who know that the new gas range can give her younger sister, the electric range, a neat bit of competition on—shall we say every angle?—often lose sight of the fact that the homemaker has been blinded to everything but the dazzling beauty of the electric range whose charms have been proclaimed loud and long by manufacturers, utilities, and dealers. It's high time something was done and publicity is the answer.

What is needed is year-round promotion. For research data shows that there's a seasonal variation in sales of consumer goods. For instance, according to a recent analysis, refrigerator and range sales are up in March, with another "up" in June, then they take a steady drop down until they reach a "low" in December. But there's no season on woman's desire for something that will mean more and happier homemaking with less effort.

Back to publicity—and if it's in the form of news, you can count on your newspapers—small-town and metropolitan—giving it to you! And giving is the word! For editors know that women today are grasping for information that will take away the curse of drudgery from their homemaking. If they're supplied with material that is up to the minute, accurate, interestingly written, and free from the taint of commercialism, ten chances to one they'll print it!

Let's start with the metropolitan papers of the Pacific Coast. Most of them have a Home Economics Editor or a smart newspaper woman in charge of the women's pages. She works either for the editorial department or the advertising department, but in either case she's between the proverbial devil and the deep blue sea. For she must keep both happy. But—possessing good judgment, with an extraordinary amount of work to do—she will accept material from outside sources and use it. For she can justify her use to the editorial staff by saying it's news—just what her women readers want to know! And to the advertising department by remarking that "you never can tell when they'll break loose with some advertising!"

The electric industry has provided plenty of such material to newspapers. The gas industry could well follow suit.

It can be done through the home service departments of utilities or range manufacturers. Most certainly these capable women can serve as a valuable bond between the industry and the newspaper by providing range information, new methods, unusual recipes, working with them on cooking schools and other promotion.

But unfortunately there are not enough Home Service women to cover the field adequately. And so the surface is hardly scratched.

A Suggested Plan

As an outsider who has not just looked in but has been in both fields—I should like to suggest this:

1. That the Pacific Coast Gas Association institute a newspaper service, designed to supply metropolitan newspapers with stories and photographs built around gas cookery and gas ranges, with a mat service to small town newspapers.
2. This should be a regular feature—once a month at least.
3. The material should be timely, well written, and from the woman's viewpoint. It should be definitely educational, yet at the same time what a definite selling punch it could carry if no more than through the photographs. The story might be built around "Here's a way to cut down cleaning," but showing the easily-kept-up interior of a modern gas range, the simply-cleaned burners. Or it might be an article on soups, or whole-meal, surface-cooked dinners; but what a story it could tell for the gradations of heat possible only with the modern gas range.

You see, the newspaper woman is eager to have her pages outstanding among women. She wants to bring her the news, the different, the easy methods. But she hasn't the time or the energy to dig out that information. The organization which provides her with such material, smartly written and *exclusive in that territory*, finds that the stories are used—usually as is. That publicity is really—free!

What's To Do About Those High Bill "Inquiries?"

● E. M. KENNEDY, Iowa-Nebraska Light and Power Co., Lincoln, Neb., in a paper, "Gas House Heating, Reducing Those High Bill Complaints," presented before the 33rd Annual Convention of the Mid-West Gas Association, St. Paul, Minn., April 11-13, 1938.—(Abstract by G A S).

IN the majority of cases, the term "high-bill complaint" is a misnomer. The customer is not complaining, he is inquiring. Frankly, our company courts this inquiry on his part. It gives an opportunity to review with him his relationship with the company, in a new field; i.e., house heating. Diplomacy, tact and knowledge in the handling of his inquiry are fundamental and vital. During the more than seven years of house heating in Lincoln, experience has taught us much, with the result that the complaint, or inquiry, on the part of the customer has been drastically reduced in recent years.

Efforts Coordinated

Here is what was done. The company coordinated the efforts of all concerned in connection with the house heating customer, seeking always, and generally receiving the full cooperation of the customer. For instance, if a customer inquires regarding a high bill, even complains of his heating costs, he is referred to the house heating department, where a complete record of his installation, past heating costs and house survey is available. Every consideration is shown him and a careful analysis is made of his inquiry. If, after this contact with the customer, the house heating department finds that the customer's inquiry justifies further investigation, a "Fuel Cost and Equipment Survey Form" is made up in duplicate and sent to the service department for immediate attention. This form gives the name and address of the customer, the type of equipment installed, heat loss and fuel cost analysis of a number of past heating bills.

The Service Department then calls at the customer's home and makes an inspection of the installation. This inspection includes the input of gas to the burner, stack temperature, draft, CO^2, baffling and other things that might be causing the heating plant to function inefficiently. All the above is noted on the form and correcting adjustments made and noted in the space provided. The meter is read and this form returned to the service department where it is held from 10 days to two weeks when another check-back is made. This call-back is principally to get another meter reading, but an effort is always made to visit with the customer to receive any reactions to the previous visit. Let it be assumed that the customer does not appreciate the effort being made to help his situation. The fuel consumption during this period is then analyzed to ascertain if any saving or improvement in efficiency has been made. In practically 95 per cent of the cases there have been improvements made, and, further, the customer is shown the willingness of the company to cooperate with him. One copy of the form carrying the complete data is then returned to the house heating department where it originated, and the other copy is filed in the service department for future reference. Further contact is left entirely to the house heating department. This procedure involves complete co-ordination between all departments of the company, each individual and each department involved having full information concerning the whole subject matter.

Follow-up Essential

Another important phase of this method is a follow-up on new installations, to the end that any tendency toward unnecessarily high heating costs is discovered and corrected before any complaint develops. Meter readings are checked, analysis of fuel costs are made, and if the bill appears to be higher than might normally be expected, an immediate check-up of the customer's equipment is made. This is followed up within a few days by a check-back to secure another meter reading to see what progress has been made toward improvement in the efficiency of the heating equipment. This procedure might rightfully be termed, "Eliminating high-bill complaints before they occur."

There are some 4500 gas heating installations in the city of Lincoln which has a population of 80,000. The data used hereinafter is not just the "cream of the crop" but an average on all types of installations. Experience has determined that conversion burners are the source of practically 98 per cent of high-bill complaints, as in most cases conversion burner efficiencies are lower than gas designed equipment.

An analysis of the high-bill complaints shows that the company has been able to effect savings from as high as 30 per cent down to nothing, with an average improvement per job of 14 per cent or five cu. ft. per degree day of gas consumption. This is a three-year average. Having a normal season in our territory of 6059 degree days and applying the five cu. ft. per degree day, we find the saving amounts to approximately 30,000 cu. ft. of gas per annum or, under our rate structure, to about $15.00 per installation savings per season. This may not appear to be a great deal, yet it is almost always the difference between losing a customer and keeping one. It might be added also that these improvements were achieved under variable weather conditions over the different seasons.

Perhaps the question arises—just what is found on these installations that might be causing high-bills. Referring strictly to the heating equipment, experience indicates that incorrect baffling or none at all is the greatest offender. Of the high-bill complaints on which surveys were made during the past three years, greatest improvement was achieved in 56 per cent of the cases by what was considered proper baffling. Other causes for complaint were improper input of gas to the burner, equipment out of adjustment, improper installation of burner, and misread meters. It can also be added that age of equipment is another contributing factor toward high-bill complaints. This is due principally to the fact that equipment gets out of adjustment, and the company is not called in until the trouble develops.

Inexpensive Procedure

The procedure is not regarded as either too elaborate or costly. While requiring some clerical work, it does not call for additional man-power. The complete record of each heating customer has always been maintained in the house heating department. It requires, therefore, only a small amount of time to set up the information called for on the form used for the service department. The cost in 1937, including all expense in connection with the servicing of house heating equipment, amounted to an average of 97 cents per complaint. This cost has been reduced each year, and the company anticipates a further reduction this year.

Optimism Keynotes P. C. G. A. Northwest Conference

By JOHN DIERDORFF

Advertising Supervisor
Portland Gas & Coke Company

Portland Gas and Coke Co.'s little cut out gas man is here surrounded by five of the principal speakers at P.C.G.A.'s Northwest Conference. Standing, left to right, R. E. Fisher, Pacific Gas and Electric So.; A. F. Rice, Southern California Gas Co.; F. O. Suffron, A.G.A. Testing Laboratories, Los Angeles. Seated, P.C.G.A. President N. R. McKee, Southern Counties Gas Co. and Paul B. McKee, president, Portland Gas and Coke Co.

OPTIMISM about the future of the gas industry was expressed by a score of speakers at the annual Northwest conference of the Pacific Coast Gas Association held, June 16 and 17, in the auditorium of the Public Service Building, Portland, Ore. Host company for the two day affair was Portland Gas & Coke Co. with John J. Winn, Jr., commercial manager, and Charles H. Gueffroy, assistant to the president, serving as the committee in charge of arrangements.

More than 150 persons in the gas industry in the West attended the meeting, rated as one of the most successful Northwest conferences. The delegates represented all phases of the industry and included a complete representation of Pacific Coast gas companies. Highlights of the national program, gas advertising, selling, production, and customer contacts were presented by well-known leaders in the fields. Norman R. McKee, vice-president, Southern Counties Gas Co., and president of the Pacific Coast Gas Association, presided.

Research activity of Portland Gas & Coke Co. in its new pilot plant at Linnton, a miniature gas generator for discovering new by-products and improving those now produced, was praised by leaders of the gas industry. Operation of the pilot plant, the first of its kind to be installed in a manufactured gas plant on the Pacific Coast, was described by E. L. Hall, operating manager. He took delegates behind the scenes in the chemical research which is pioneering new fields for the gas industry.

More than 100,000 hp. in natural gas engines have been placed in operation in the Los Angeles area in the past six years and the gas engine business is growing rapidly despite low cost electricity from Boulder dam. This review of the latest development of the gas industry in increasing its load with engines operated with natural or manufactured gas was given by Willard F. Suess, supervisor of gas power sales, Southern California Gas Co., Los Angeles.

"In the past few years, the use of natural gas engines has more than doubled in the Los Angeles area in total horsepower installed," explained Mr. Suess. "Most of the natural gas engines installed recently in Los Angeles are fully automatic. They are operated by clocks which turn on the gas in the morning and turn off the gas at night.

"Natural gas engines are used for a wide range of jobs in office buildings, pumping plants, factories, ice plants, creameries and range from 10 to 500 hp. One firm in Los Angeles has demonstrated the economy of the natural gas engine in a typical way. With this 40 hp. engine, the company generates its electricity, with the waste heat, it heats its plant and all the hot water needed. This is accomplished at less cost for gas than the cost alone of electricity for the plant at the low industrial rates. Thus the building heat and the hot water heating are by-products which cost nothing. The plant is also automatic."

The contribution of Portland Gas & Coke Co. in building the Portland territory through the 78 years of its existence was praised by Mayor Joseph K. Carson in the welcoming talk of the opening session. Paul B. McKee, president, Portland Gas & Coke Co. showed how brilliant chemical research in by-product recovery has enabled gas companies to maintain a position of leadership.

Seven all-gas kitchens on a revolving platform, which shows one of them at a time through windows from an attractive court, will feature the gas industry's $140,000 exhibit at the Golden Gate Exposition, R. E. Fisher of Pacific Gas and Electric Co., San Francisco, chairman of the exhibit committee, told delegates.

Improved efficiency and performance of gas appliances were subjects covered by F. O. Suffron, director of the American Gas Association's testing laboratory at Los Angeles. "In the days of manually-operated appliances control of pressure, specific gravity, heating value and chemical composition and impurities was not required to the degree necessary today. We are entering a period of controlled fuel used in controlled appliances."

Featured on the advertising session program were Vernon Churchill of McCann-Erickson, who spoke on "National Advertising and Local Tie-in;" R. B. Elliott of Portland Gas & Coke Co., and N. O. Fratt of Seattle Gas Co., on "Cooperative Newspaper Advertising."

Papers dealing with problems of gas manufacture were read by A. B. Allyne of San Francisco, chairman of the technical section, and F. C. Hawks of the Washington Gas & Electric Co., Tacoma. N. H. Wardale, Portland

(Continued on Page 48)

United Fuel Gas Co. Moves A Compressor Station

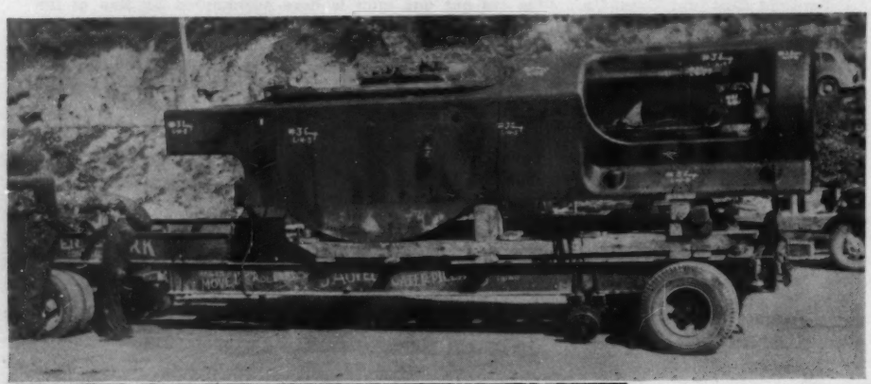
By JOHN P. CHENOWETH Special Representative, United Fuel Gas Company

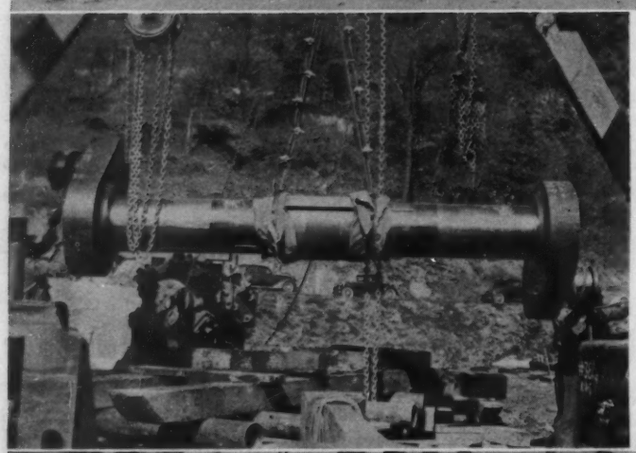
CHANGING market conditions and field production frequently require relocation, not only of transmission lines, but of large compressor stations. Recently the United Fuel Gas Co., operating in the states of West Virginia, Kentucky and Ohio, found it necessary to remove Forman Compressor Station, from Jane Lew, W. Va., to Glenville, W. Va., 40 miles distant.

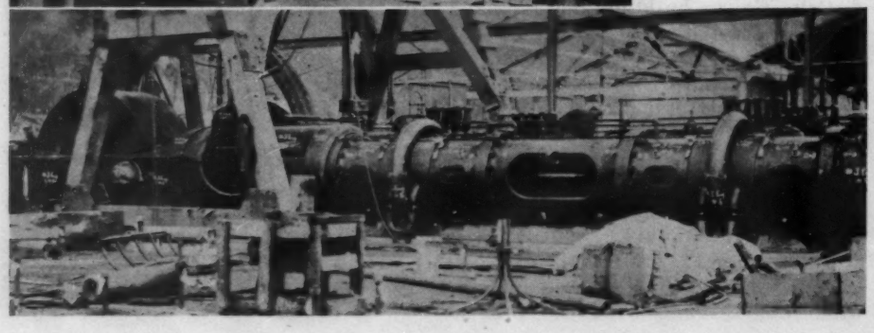
Three 1350 hp. twin compressors, together with two complete auxiliary units, two steel buildings of considerable size, pipe, valves, and fittings, with a total weight of 587 tons, constituted the equipment involved. The largest individual piece of equipment weighed 36 tons.

Since the scene of action was distant from railroad facilities, it was necessary to transport all equipment by trucks.

Each individual unit and component parts together with small gears, fittings, etc., had to be carefully marked and packed to facilitate erection at the new site. The 50-ton crane which extended the width of the original building had to be used to remove the heavy machinery, and as there was no crane at the new location at Glenville, an intricate problem was presented.







ABOVE: An engine mounted on truck, in transit from the Jane Lew compressor site to Glenville, West Virginia. AT LEFT: Placing a crankshaft. BELOW: Engine No. 1 in operation at the new site.

The time limit was a very important factor in the project. An extremely bad soil condition at Glenville necessitated the driving of concrete piles. On completion of the pile driving, a concrete mat was poured over the piles and work proceeded night and day.

It was necessary to obtain approval of public authorities for transportation of heavy loads over highways and bridges. Using a combination of the crane and a 60-ton tractor with a side boom, heavy equipment was loaded on trucks at Forman. After each truck was loaded the weight was checked by a state highway inspector, and no movement could be made without his approval. Special trailers were constructed to distribute the load. Some of these trailers had two rows of nine wheels in the rear to distribute the weight.

A timber runway was built from the foundation to the outside of the building, and the first main frame was skidded on rollers by block and line from the winch of a tractor. Once outside, the frame was raised to the trailer level by jacking, then rolled on to the trailer. The rollers were then removed and the frames were securely lashed to the trailer.

On account of the many steep grades encountered, it was necessary to use a heavy truck ahead of the trailer as a tow and another truck on the rear connected by chains to act as a brake going down grades. During the removal of this heavy equipment a great deal of heavy rain was encountered with consequent difficulties.

The entire removal was handled without a single major accident and at the present time the engines and equipment are running smoothly at Glenville and pumping gas for Pittsburg delivery.

As the crane was still in position at the original location, an A frame was constructed of heavy oak timbers bolted together with steel gusset plates. Heavy fly wheel havles, crank shafts and other engine parts were then placed by chain hoists.

Before the roof was constructed the engines were started up and ran as smoothly as a watch, regardless of the lack of shelter and the fact they had been in service 25 years, and had completed a 40-mile journey.

The time limit for starting the new plant at Glenville was set at November 1, but the engines were actually placed in operation with one week to spare.

Portable Compressor Solves Temporary Shut-off Problem

(Continued from Page 20)

bags in various sizes that the working pressures recommended by the manufacturer are the limits to which it is practical to go without danger of the bags slipping and breaking, and that when these are properly inserted, in good condition, and kept at this pressure, there is practically no chance of encountering difficulty. As a safety factor, however, it is always best to use two bags in series. It is also often a good plan to install a safety valve set for the recommended pressure the bags are to withstand. This of course should be on the upstream side to relieve the pressure against the bags if it becomes excessive.

The use of a compressor in connection with these bags as discussed above, opens several possibilities for repair work. It is always necessary, however, to have a closed gate or similar provision around which to connect the discharge of the compressor, as in general the pressures that the bags could withstand on the discharge are too low to be of much help.

If the capacity of the usual 110 cu. ft. compressor is too low, several can be connected together and sufficient volume usually obtained in this way. The higher intake pressure that can be maintained (pressure against bags) will increase the capacity somewhat over the normal compressor displacement with intake at atmosphere pressure.

In using these bags in standard steel pipe such as is found in most natural gas transmission lines, drilling and tapping the pipe itself to receive the thread end of the cylinder containing the bags is usually impractical as an insufficient number of threads are obtained. This difficulty has been overcome by installing pipe saddles a size larger than the bag cylinder, on the pipe and drilling through them. The end of the cylinder is filled with a special bushing made so it will run loosely into the saddle and allow the end of the cylinder to come flush with the inner side of the pipe. Fig. 2 shows a bag assembly being serviced into a saddle. The saddles are then plugged when the job is completed.

■ ■

Power Wins Essay Award

Wallace Power, advertising manager, General Gas Light Co., Kalamazoo, Mich. won the $100.00 first prize in a "Buy Now" essay contest sponsored by the retail merchants bureau of the Kalamazoo Chamber of Commerce.

Seated at specially-designed steel tables, the Peoples Gas Light and Coke Co. telephone service clerks handle an average of 5,000 calls each day.

Peoples Gas Light Improves Customer Contact Routine

IF you will dial Wabash 6000 the next time you are in Chicago you will gain a distinct impression of another step taken by The Peoples Gas Light & Coke Co. to better its customer relations. The first step, reported in *GAS*, July 1937 embraced certain changes in Customers' Hall. The latest development is a "Speed With Courtesy Program" by which all public contact employees are being shown a "Better Way to Say It" as related to routine service calls and particularly to the handling of telephone calls.

When you telephone-in, for example, the first voice you hear says, "This is Peoples Gas." If you want your gas turned off, the operator says, "One moment please" and connects the customer with the right party. When the operator doesn't understand, she says, "I beg your pardon," and not—"I don't hear you." She says "Thank you" to women and "Yes sir" to men.

The telephone section of the customers' (order) department has recently been remodeled and new equipment installed. Ninety to 95 per cent of the calls of the company go on the telephone order desk in this department. The company is anxious that this department build good will by a fast, systematic treatment of calls. The customers' order employees are being taught to take orders only and to refrain from asking miscellaneous questions.

When an applicant for gas telephones-in, the customers' service man taking the call responds with, "Order please," "Have you called about this before, please," "What's the new address, please," "and the apartment please," "What's the full name please, and the old address, Mrs. Smith," "the apartment, please," "and the telephone number, please," "Will you use gas just for cooking, please," "When are you moving Mrs. Smith," "Where will our man get the key for the new apartment, please," "And the old apartment Mrs. Smith." He closes with, "Thank you Mrs. Smith, I'll take care of this for you."

The system of handling contacts, being put into practice by Peoples Gas, has been developed by Joan E. Wing, a specialist in public contact.

All employees who have contact with the public such as those who receive gas bill payments, meter readers, salesmen and appliance adjusters will be included in the training program.

Peoples Gas gets an average of 5,000 incoming telephone calls per day that involve service orders, rates and other information. On peak days this is stepped-up to as many as 11,500 calls. Calls for a year total about 750,000.

■ ■

Regional Advertisers Elects Rutherford a Director

R. J. Rutherford, vice-president, Worcester Gas Light Co., Worcester, Mass., has been elected a director of Regional Advertisers, Inc., sponsors of the Mystery Chef radio program. He succeeds Frank D. Cadwallader, vice-president, Boston Consolidated Gas Co., Boston, Mass., who resigned.

Bill Affecting Natural Gas Shipment Passes Senate

THE Senate on June 7 passed the House Bill (H. R. 6586), which provides for close regulation by the Federal Power Commission of the interstate shipment of natural gas by pipe line. Because of minor amendments, the bill, which passed the House July 1, 1937, and which was amended by the Senate, returns to the House where it may be accepted without being sent to conference.

Excerpts from the bill follow:

"(b) The provisions of this Act shall apply to the transportation of natural gas in interstate commerce, to the sale in interstate commerce of natural gas for resale for ultimate public consumption for domestic, commercial, industrial, or any other use, and to natural-gas companies engaged in such transportation or sale, but shall not apply to any other transportation or sale of natural gas or to the local distribution of natural gas or to the facilities used for such distribution, or to the production or gathering of natural gas.

"Sec. 3. After six months from the date on which this Act takes effect no person shall export any natural gas from the United States to a foreign country or import any natural gas from a foreign country without first having secured an order of the Commission authorizing it to do so."

Provisions are also contained in the bill controlling rates and charges, schedules, suspension of new rates, determination of cost of production or transportation, cost of property, extension of facilities, abandonment of service, etc. Detailed provisions for the keeping of accounts, records and memoranda and for determination of rates of depreciation are also included. Periodic and special reports are required as well as detailed reports on officials dealing in securities, state compacts and complaints.

The Commission is authorized to hold investigations, compel attendance of witnesses and the taking of depositions.

Violations of the act carry a maximum punishment of a fine of $5000 or imprisonment for not more than two years, or both. In addition, anyone convicted of violating the bill is liable to a fine of $500.00 for each day of the occurrence of the offense.

T. P. Pinckard Elected President of the Canadian Association at June Meeting

The Canadian Gas Association at its 31st Annual Convention, held June 9-10 in Toronto, Canada, unanimously elected T. P. Pinckard, vice-president and general manager, United Gas and Fuel Co. of Hamilton, Ltd., Ontario, as association president. Mr. Pinckard who was formerly first vice-president of the association, succeeds Edward J. Tucker. Other officers elected at the convention were: first vice-president, Julian Garrett, general manager, Northwestern Utilities Ltd., Edmonton, Alberta; second vice-president, J. B. McNary, manager and secretary, Canadian Meter Co., Ltd., Hamilton, Ontario; and secretary-treasurer, G. W. Allen, gas survey engineer, Toronto, Ontario.

More than 250 delegates attended the convention sessions, which were under the supervision of E. J. Tucker, retiring president, J. D. von Maur, papers committee chairman, and G. W. Allen, association secretary. Mr. von Maur opened the papers program on June 9 with a discussion of "The Place and Value of Gas in Industry." Other speakers on the first program were Raymond F. Mann, Wenz-Mann Co., Kenmore, N. Y., and John Keillor, gas engineer, B. C. Electric Ry. Co., Ltd., Vancouver, B. C.

Gas utilities throughout Canada were represented as Halifax, Quebec City, Montreal, Ottawa, Hamilton, London, Chatham, Sarnia, Niagara Falls, Fort Erie, Ingersoll, Brantford, Kitchener, Stratford, Winnipeg, Edmonton, and Vancouver sent delegates. Representatives from the United States included Merrill Davis, A.G.E.M. president who addressed the closing session, N. C. McGowen, A.G.A. president, Alexander Forward, A.G.A. managing director, R. M. Conner, director A.G.A. Testing Laboratories, and Oscar Fogg, vice-chairman of the board, Consolidated Edison Co. of New York.

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Papillion and Ralston, Neb., To Receive Natural Gas

The Northern Natural Gas Co., Omaha, Neb., has just been granted a 25-year franchise to bring natural gas to Papillion and Ralston, Neb., according to an announcement by Frank H. Brooks, president of the Northern Co.

Construction of branch pipe lines and seven miles of three-inch main from the company's main natural gas line at the South Omaha border station will begin at once. Completion of construction is expected to take place within 90 days.

Approximately 300 customers will be served in the two communities as well as the Kritenbrink Clay Products Co., Ralston, and other industries.

Fred A. Miller Resigns From Duties With S. R. Dresser Co.

FRED A. MILLER, after more than 35 years of service with S. R. Dresser Manufacturing Co., Bradford, Pa., has relinquished all official duties with the company. His resignation as a director and officer was accepted after a tribute by his associates to the position of high respect which he has held in the gas industry and the company. He has been elected Honorary Chairman of the Board of Directors of the company.

In 1905, when the S. R. Dresser Manufacturing Co. was first incorporated, Mr. Miller became secretary-treasurer. Solomon R. Dresser, who founded the company in 1880, was president. Following Mr. Dresser's death in 1911, Mr. Miller became president and served in that capacity for 18 years until 1929, when he was elevated to chairman of the Board of Directors.

During his association with the gas industry, Mr. Miller served as president of the Natural Gas Supply Men's Association until its affiliation with the American Gas Association. He later became a Director of A.G.A.

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"A United Industry" Will Be P.C.G.A. Convention Theme

Norman R. McKee, president, Pacific Coast Gas Association, has announced that the theme of the 45th Annual P.C.G.A. Convention, to be held September 14-16 at the Santa Barbara Biltmore Hotel, Santa Barbara, Calif., will be "A United Industry." The theme of the 1937 convention was "Shoulder to Shoulder" and 1936 "Gas Marches On."

George Smith, Santa Barbara, manager, Southern Counties Gas Co., will be general convention chairman. His committee members will be: A. R. Combs, properties, George Finley, golf, W. W. Fitkin, entertainment, J. C. Gilbert, attendance and reception, R. W. Gregory, transportation, E. B. Hanmer, banquet, P. E. Kling, registration, Homer Laughlin, convention newspaper, Otto Mauthe, publicity, C. H. Potter, hotel accomodations, and Mrs. Norman R. McKee, hostess.

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Continental Oil Co. To Lay Gathering Lines in Texas

The Continental Oil Co., Ponca City, Okla., will lay about 80 mi. of gathering lines to supply one main and two auxiliary casing-head gasoline plants to be erected in the KMA field near Wichita Falls, Texas, according to J. G. Dyer, vice-president of the company. Five 400 h.p. Clark angle-type compressors will be used in the main compression-type plant on Continental's Wagoner lease. The initial installation will have a capacity of 15,000,000 cu. ft. of gas daily.

■ ■

Illinois Utilities Association Holds General Meeting

Discussion of topics of interest to gas men in technical work, in sales promotion, and in accounting activities composed a good portion of the program of the Illinois Public Utilities Association's General Meeting held in Springfield, May 26 and 27. F. E. Kelley, Central Illinois Public Service Co., Springfield, Ill., is president of the Association.

Midwest Industrial Sales Meeting Held In May

THE Midwest Industrial Gas Sales Council of the Industrial Gas Section, American Gas Association, met May 24-25, in Indianapolis, Ind. Included in the two-day program were trips to nearby factories where large industrial gas furnaces were inspected. Many members also attended the Indiana State Restaurant Association meeting and exhibit which were in progress in Indianapolis at the same time.

Papers were presented by R. L. Fitzsimmons, E. C. Atkins & Co., Indianapolis; Harry O. Bennett, The Surface Combustion Corp.; E. E. Magnuson, Eclipse Fuel Engineering Co., Rockford, Ill., and T. A. McGee, Insulating Products Co., Aurora, Ill.

Officers elected for the 1938-39 season of the Midwest Industrial Gas Sales Council of the A.G.A. Industrial Gas Section, are as follows: Arthur J. Huegel, chairman, Milwaukee Gas Light Co., Milwaukee, Wis., Rodney C. Hayler, vice chairman, Central Indiana Gas Co., Muncie, Ind., and P. F. Gibson, secretary and treasurer, Western United Gas & Electric Co., Aurora, Ill. The program committee is headed by William M. Riach, Jr., The Peoples Gas Light & Coke Co., Chicago, James Dare, Public Service Company of Northern Illinois, Streator, Ill., is chairman of the Luminous Flame committee. The publicity committee has Paul F. Gibson, Western United Gas & Electric Co., Aurora, Ill. for chairman. Chairman of the Competitive Fuels Committee is C. H. Lekberg, Northern Indiana Public Service Co., Hammond, Ill.

■ ■

Aksarben Natural Gas Co. Serves Nebraska Cities

The Aksarben Natural Gas Co., Omaha, Neb., has been granted a franchise by the city council of Bertrand, Neb., for the construction of natural gas lines into that city. Loren Laughlin, company manager, has announced that lines would be constructed from the line of the Kansas Pipe Line and Gas Co., six miles north of Holdrege, and east of Bertrand. If the Loomis town board approves the company's natural gas proposal, a three mile spur will also be extended to that community.

Mr. Laughlin has also revealed that the Aksarben Co. plans to have completed by July 1, its westward line extension from Cambridge for bringing natural gas to Indianola, Neb. The company is now serving other towns in the Republican valley, and negotiations are still pending between the utility and the city of McCook, located west of the Republican valley.

■ ■

Twin Cities May Get Natural Gas Service

With the favorable reception by President Roosevelt of a proposal in the form of an application for a self liquidating RFC loan of $52,000,000 for the construction of natural gas pipe lines to Minneapolis and St. Paul, the possibility of the twin cities being served by natural gas increased. The proposed line would be built from the Montana and Wyoming fields to the two cities.

In informal conference at the Public Utilities Advertising Association Convention are Fred J. Hatch, Wisconsin Public Service Corp.; Al Joy, Pacific Gas and Electric Co.; W. H. Hodge, Public Utility Engineering & Service Corp.; Dale Remington, Wisconsin Public Service Corp.; P. D. Lewis, Laclede Gas Light Co.; H. J. Rowe, Arrow Electric & Power Co.

Better Copy Contest Winners Named by Advertising Group

THE Public Utilities Advertising Association closed its two-day convention program, held in Detroit, Mich., June 13-14, with the announcement of winners of the 1937 Better Copy Contest, conducted annually for all gas, electric, and street railway companies in the United States and Canada. H. G. Rowe, Iowa Electric Light and Power Co., headed the Contest Committee.

Gas company advertising copy awards are classified as follows:

Load Building—Newspaper:

Premier Award: The People's Gas, Light & Coke Co. Award of Excellence: Philadelphia Gas Works Company. Award of Excellence: Niagara Hudson Public Service Company. Award of Merit: Texas Cities Gas Company.

Public Relations—Newspapers:

Premier Award: The People's Gas, Light & Coke Company. Award of Excellence: New Orleans Public Service, Inc. Award of Excellence: Public Service Company of Northern Illinois. Award of Merit: The Cincinnati Gas & Electric Company.

Merchandise—Newspaper:

Premier Award: Consolidated Edison Company. Award of Excellence: Rochester Gas & Electric Corporation. Award of Excellence: Gas and Electric Shops, Cincinnati. Award of Merit: Milwaukee Gas and Light Co.

Employee Magazine:

Premier Award: Detroit Edison Company. Award of Excellence: Consolidated Edison Company. Award of Excellence: The Philadelphia Company (Pittsburgh).

Employee Newspapers:

Premier Award: Cincinnati Gas & Electric Company. Award of Excellence: Florida Power and Light Company. Award of Excellence: Georgia Power Company.

Direct Mail for Public Utilities:

Premier Award: Georgia Power Company. Award of Excellence: Pacific Gas & Electric Company.

Window or Inside Display:

Premier Award: Southern California Gas Company. Award of Excellence: Philadelphia Gas Works Company. Award of Excellence: Consolidated Edison Company. Honorable Mention: The Laclede Gas Company.

Posters for Public Utilities:

Premier Award: Boston Edison Company. Award of Excellence: Commonwealth Edison Company. Award of Excellence: The People's Gas, Light and Coke Company. Honorable Mention: British Columbia Electric Railway Company, Ltd.

At the closing session the 1938-39 election of officers was held.

Howard Weeks, Consolidated Edison Company of New York, was elected president. Other new officers included Keith Hartzell, Lake Shore Electric Railway Co., Chicago, first vice-president; H. J. Rowe, Iowa Electric Light and Power Co., second vice-president; Al Joy, Pacific Gas and Electric Co., San Francisco, third vice-president; Thomas Spain, Public Service Electric and Gas Co., Newark, treasurer, and H. W. Alcott, Daniel Starch and Staff, re-elected secretary.

Convention speakers included Henry Obermeyer, Consolidated Edison Co., T. F. Gessner, Detroit Edison Co., Fred Toy, Cincinnati Gas and Electric Co., and C. E. Hooper of C. E Hooper, Inc., N. Y.

GAS CAMERA

ABOVE: Pictured at the opening session, June 2, of the A.G.A. Executive Conference in Chicago are left to right: Merrill N. Davis, Dean H. Mitchell, J. V. Postles, H. L. Masser, A. F. Bridge, F. X. Mettenet, H. L. Dickerson, E. H. Poe, R. W. Hendee, J. F. Rooney, Randall J. LeBoeuf, James F. Pollard, T. J. Strickler, Frank H. Adams, Alexander Forward, N. C. McGowen, Kurwin R. Boyes, George F. Mitchell, George S. Hawley, Henry Obermeyer, W. E. Derwent, N. T. Sellman, C. E. Bennett, C. W. Bennett, C. E. Gallagher, Hale A. Clark, H. P. J. Steinmetz, C. M. Cohn, Herman Russell.

Indiana Gas Association Convenes May 16-17

(Photographs, Courtesy Nat Blinks)

ABOVE: In Western garb Sheriff M. E. NESTOR (center) and Deputies MAURICE JONES (left) and R. K. "Chief" MUMGARNER (right), of the Gary Heat, Light and Water Co., are on the look out for bad men. BELOW, LEFT: In a more serious mood are H. CARL WOLF (left), Indiana Gas Association president, and ALEXANDER FORWARD, A.G.A. managing drector. BELOW, RIGHT: STANLEY JENKS, editor, G A S, and DEAN H. MITCHELL, new Indiana Gas Association president, discuss old times.

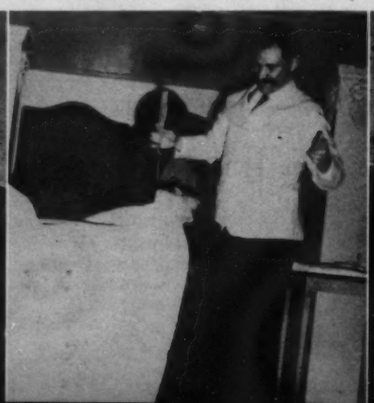
A.G.A. Hotel, Restaurant, and Commercial Sales Men Gather May 23-24

(Photographs, Courtesy A. Gordon King)

AT LEFT: J. P. LEINROTH, public Service Electric and Gas Co., addresses conference delegates while HALE A. CLARK, Detroit City Gas Co., looks on.

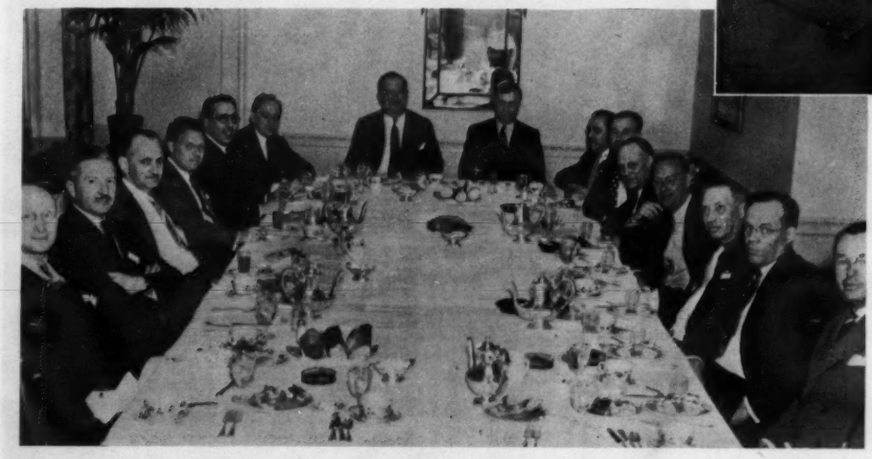
AT LEFT: LAWRENCE R. FOOTE, Central Illinois Electric and Gas Co., and J. F. QUINN, The Brooklyn Union Gas Co., present their respective remarks.

BELOW: Joviality prevails with GEORGE SMITH, Standard Gas Equipment Corp., EUGENE D. MILENER, and HENRY M. BRUNDAGE, JR., Washington Gas Light Co., pictured at left. Center, FREDERICK T. HEAD, in chair, and H. H. LIPPE, Consolidated Edison Co. of N. Y., Inc., act in skit, "Selling Gas Equipment to a Barber." RIGHT: W. W. YOUNG, JR., Watertown, Conn., ALVIN M. STOCK, A. M. APMANN, Derby Gas & Electric Co.



. . . . COVERING THE CONVENTION FRONT FOR MAY AND JUNE

A.G.A.E.M. Meets in West Virginia, May 25-27



ABOVE: Examining A.G.A.E.M. golf tournament prizes are, left to right: A. E. PETERSEN, Minneapolis-Honneywell Regulator Co.; R. L. CLEWELL, National Radiator Corp.; W. T. RASCH, American Gas Products Corp.; JOHN VAN NORDEN, American Meter Co.; H. N. RAMSEY, Welsbach Co.; A. M. BROWN, Cleveland Heater Co.; and B. L. MATTHEWS, Patrol Valve Co.

AT LEFT: Gathered at an officers and directors' luncheon are L. R. Mendelson, W. F. Rockwell, R. F. Cleary, H. N. Ramsey, W. R. Smith, F. E Sellman, Merrill N. Davis, A.G.A.E.M. president, G. E. Fraser, C. W. Berghorn, managing director, A.G.A.EM., H. P. Mueller, W. E. Derwent, W. T. Rasch, R. G. Logue, Frank H. Adams, and E. W. Roberts.

The Joint Conference of the A.G.A. Production and Chemical Committees was Held in New York, May 23-25, at the Hotel Pennsylvania

(Photographs courtesy A. Gordon King)

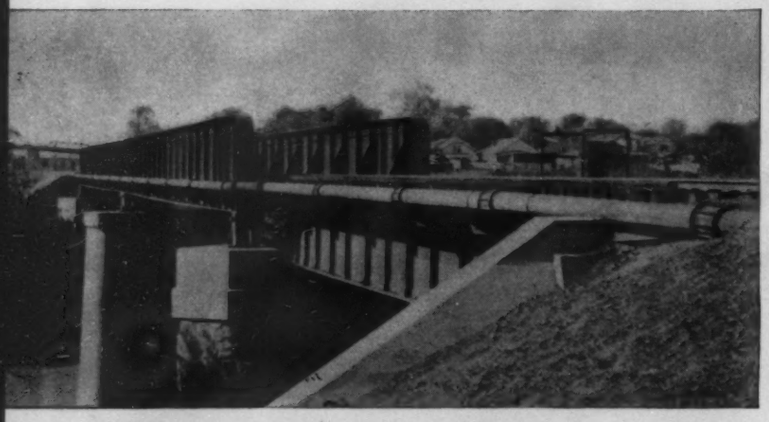
ABOVE: At left, R. E. KRUGER, Rochester Gas and Electric Corp.; OLIVER S. HAGERMAN, Atlantic Seaboard Corp.; J. F. ANTHES, Brooklyn Union Gas Co.; and C. F. TURNER, The East Ohio Gas Co., enjoy the current speaker. Center, A. M. BEEBEE, Rochester Gas and Electric Corp., addresses the conference. At right, caught in an informal mood are (left to right): C. A. GALLAGHER, T. M. GILBERT, L. M. HUMRICHOUSE, J. L. WOOD, R. VAN VLIET, R. P. OLIVEROS, W. H. FULWEILER, between conference sessions.

BELOW: At left, gathered for a committee luncheon are (left to right): R. C. LISK, H. K. SEELEY, A. E. LOCKWOOD, F. T. CARPENTER, A. C. RATHKEY, and F. H. ANDREWS. Center, H. VITTINGHOFF, Stone and Webster Engineering Corp., addresses a conference session. At right, pictured in informal discussion are M. J. PIEFFER, J. P. STEPHENS, E. F. WEEKS, R. VAN VLIET, R. M. KELLOGG, J. K. KELLOGG, and R. L. ELLIS. The conference was a joint meeting of the Production and Chemical Committees.

Keep Your Pipe Lines

1 EVERY "DRESSER" AN EXPANSION JOINT!—A mile of pipe may expand almost 2 ft. through 50°F., but this expansion can't hurt a flexible Dresser-coupled line, which absorbs it—through boiling sun, sub-zero weather, frost, and thaws.

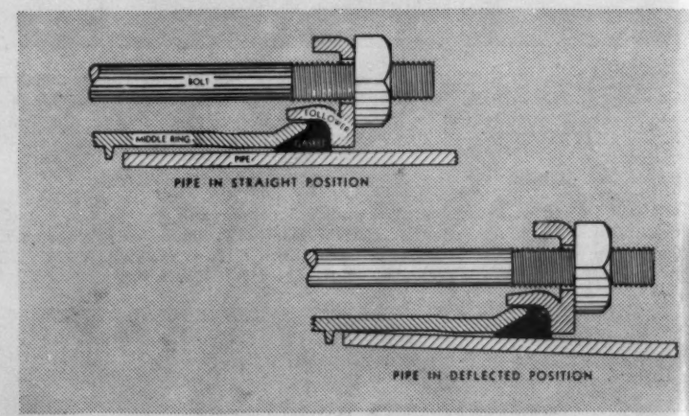
2 GROUND MOVEMENTS ABSORBED!—Uneven ditching, unequal backfill, soil settlement and shifting, soft ground, undermining, frost, and thaws—all are forces that cause pipe lines to move. Flexible Dresser joints absorb such normal movements.



3 VIBRATION TAKES NO TOLL!—Railroads, bridges, traffic, manufacturing plants, etc., transmit repeated shocks to pipe lines. But each pipe section "floats" safe from harm in a flexible Dresser joint, saving many breaks directly traceable to vibration.

4 NO HARMFUL LOWERING STRESSES!—Because no dangerous stresses are set up when lowering a flexible Dresser-coupled line, assembly above ditch is safe and practical, with attendant advantages of narrow trench, no bell-holes, and faster joining.

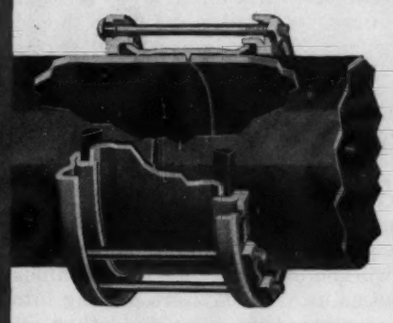
5 CURVES WITH STRAIGHT PIPE!—Each Dresser Coupling adjusts line simply and practically to curves, grades, trench irregularities, mis- and re-alignments—up to 6° or more. Eliminated are exact surveying and grading, many field bends, special fittings, and delays.



6 HOW DRESSER FLEXIBILITY WORKS. —Two *resilient* rubber-compound gaskets inside each Dresser Coupling flex and "follow" both lateral and in-and-out pipe movements, yet maintain a constant seal between pipe and coupling, assuring tightness despite normal pipe movements.

FLEXIBLE!*

(*Cutaway view of Dresser Coupling, Style 38*)



*FLEXIBILITY ...YES! ALSO:

1. PERMANENT TIGHTNESS—proved for 50 years, on 150,000 miles of pipe.
2. SIMPLICITY—standard parts are assembled on plain-end pipe by unskilled labor, using only one tool, under almost any weather or ditch conditions.
3. SPEED—typical examples: 4 min. for 5" size; 6 min. for 8"; 8 min. for 14" (two workmen).
4. STRENGTH—predetermined; joints safely withstand any specified pressure.
5. TRUE ECONOMY—a truly lower joint cost throughout life of line, plus salvage.

Turns, offsets, bends, and branch connections are taken care of by a complete, companion line of Dresser Welded-steel Ells, Tees, Crosses, Laterals, Line Caps, etc., all employing same working principle as illustrated above.

... For Permanent Tightness ... For Easier Construction

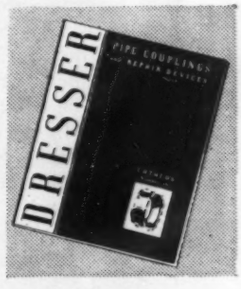
WHAT happens to your pipe lines after they are buried? They creep, crawl, twist, and turn—the result of expansion, vibration, and deflection forces more pronounced in pipe lines than in most man-made structures.

How can resulting stresses from this constant pounding by Nature be absorbed? By permitting each pipe length to move independently. Since pipe is relatively rigid, it can do this *only* when joined with *flexible* connections!

All Dresser joints are flexible. Their flexibility is the only *time-proved* principle that safeguards pipe lines and helps to assure *permanent* tightness by absorbing stresses that might otherwise cause failures.

Dresser flexibility also facilitates construction by (1) making assembly above the ditch safe, and by (2) permitting many curves and grades to be made with straight pipe (see opposite).

Result: Easier, speedier, less costly pipe-line construction; tighter, more reliable pipe-line performance.



For further details, write for our General Catalog No. 36, a virtual handbook on pipe joints. ●S. R. DRESSER MFG. CO., BRADFORD, PA. *New York:* 17 East 42nd Street; *Chicago:* Peoples Gas Building; *Houston:* Shell Building; *San Francisco:* 1038 Polk Street; *In Canada:* Dresser Mfg. Co., Ltd., 60 Front Street, West, Toronto, Ontario.

DRESSER
PIPE COUPLINGS

Present Day Regulation

(Continued from Page 19)

cost of carrying them is taken care of through operating expenses. They say to do this would require consumers to pay the cost of carrying leases and at the same time a return upon their enhanced value. In other words, permit the utility to "have its cake and eat it too."

Since the first of the year accountants representing commissions in those states that are called upon to deal extensively with natural gas utilities have been working intently upon revisions to the Uniform System of Accounts for Natural Gas Utilities to the end that a solution of these problems may be found from at least an accounting standpoint. Quite recently a group of accountants representing the commissions of four such states, after conferences, recommended that the National Association of Railroad and Utilities Commissioners' Accounting Committee revise the Uniform System of Accounts so that leaseholds be recorded in Account No. 100-4, which is entitled "Utility Plant Held for Future Use," recording therein productive but non-producing gas fields, and unproven or undeveloped gas fields, and that there be recorded in Accounts Nos. 503-2 -3, and -4, gas well royalties, amortization of producing natural gas lands, development of natural gas reserves, and the cost of leases on non-productive or undeveloped natural gas fields.

In plain layman language the results of these recommendations are that reserve acreage should be classified as utility plant held for future use on the asset side of the utility's balance sheet, from which such acreage may be easily transferred to utility plant in service when such acreage becomes productive, and that delay rentals and exploration costs in connection with undeveloped reserves should constitute an income account and take the same status as depreciation and depletion expenses and taxes. These recommendations may, as far as accounting goes, be the answer. If they are accepted the utility's corporate structure is not disturbed and its books do not falsely record its costs. The Accounting Committee of the National Association will make its report to the Association in November of this year, so before it frosts again we should have an answer.

I cannot let this opportunity pass without issuing a warning as to what is taking place in this country in connection with utility taxes and utility costs as they affect consumer rates. State and federal commissions have prided themselves upon rate reductions and the savings to users of utility service that they have ordered and required during the past three years. The records will show, I dare say, that since 1934 not less than 300 million dollars have been cut from annual utility bills by commission action, either through orders, the result of formal rate cases, or as the result of negotiations and conferences.

If taxes continue to increase it is bound to affect consumer rates. If the increase continues at the same speed as has been the case during the past two years the effect on rates may be startling. I do not wish to be understood as saying that there will be no rate reductions in the future or as prejudging the reasonableness of existing utility rates, even in the face of tax increases. The reasonableness of a utility's rates can only be determined from the evidence concerning the value of its property, its affairs, and business. I do not desire to quarrel with the lawmakers or taxing bodies. It is within their province to enact tax laws and assess taxes, but it seems to me that the time has come for someone to call the attention of the users of utility service to what is being done to them so they may understand why commissions are unable to bring about as large reductions in utility rates as the public may believe they are entitled to. It may be that the users of utility services should organize and actively protest increases in utility taxes so that they will be relieved of this burden and enjoy the benefits, in many instances, of reduced rates.

I have candidly and, I believe, fairly discussed some of the problems facing commissions and the gas industry. The solution of most of them can only be worked out by a meeting of minds between us. Force orders putting into effect accounting rules and other requirements of the industry, expensive and burdensome to you, will often not be in the public good. Such orders are usually appealed and much time and expense is consumed before they are finally made effective. Results more satisfactory, nine times out of ten, can be reached by a mutual understanding of the problem and a cooperative spirit in its solution.

"C. P." Range to Have Public Introduction Next Month

THE Certified Performance Gas Range will be introduced to the public through a promotion campaign to be launched about August 1, according to an announcement by Merrill N. Davis, president of the Association of Gas Appliance and Equipment Manufacturers. Each of the new ranges will carry a "CP" seal signifying product superiority and compliance with "CP" specifications.

A committee of the gas industry's best engineers, technicians and sales executives has set up a minimum of 22 rigid specifications which must be met by every range receiving a "CP" seal. This mark will indicate to the purchaser that all the elements of excellence known to any cooking appliance are included in every "CP" Range, regardless of make, as the range manufacturers have joined in cooperation with the A. G. A. E. M. in promoting one standard of superiority. According to Mr. Davis, "This will be the first time every super feature known on any gas range will be brought together in one appliance." Manufacturers will continue to produce other models to meet the demands of the lower income market.

Promotion of the product will be supported by a national advertising program. Individual manufacturers producing "CP" ranges will also conduct their own advertising campaigns. Individual gas companies throughout the country and retail gas range dealers will also carry on local promotional activities. Cooking schools, home service classes and cooking carnivals will be held, after August 1, in cities throughout the country as additional promotional efforts.

"CP" Range convenience features include automatic lighting for top burners, ovens and broilers; 43 per cent more broiling area; better insulation, and greater efficiency making possible a 600 degree broiling temperature in one-fourth less time than required in ranges of a year ago.

■ ■

Lee S. Miller Will Supervise Michigan Natural Gas

Lee S. Miller of Detroit has been appointed as chief engineer of natural gas for the State of Michigan, according to an announcement by Paul H. Todd, chairman of Michigan public utilities commission. The division of natural gas supervision is newly created.

Prominent gas executives in attendance at the "Liberty Home" banquet, June 11.

A. G. A. "Liberty Home" Contest Winners

WINNERS of 27 cash prizes, totalling $13,700 in the A.G.A. "Liberty Home" Architect's Competition were announced June 11 when the judges entertained at a dinner attended by 80 eastern gas executives and architects at the Hotel Ambassador, New York. One of the prize-winning designs, subject to the approval of the New York World's Fair Board of design, will be selected as a model for a home in the Fair's "Tomorrow Town."

There were three classifications in the contest which attracted 675 participants for final judging. Winners were:

Smaller class (18,000-24,000 cu. ft.)

Four first prizes of $1,000 each—John Stenken, Leonia, N. J.; Alden Becker, Los Angeles, Calif.; Clarence W. Jahn and Edwin A. Wagner, Milwaukee, Wis.; W. C. Houtz, Arthur McVoy and Leonard Wayman, Bloomfield Hills, Mich.

Four second prizes of $300 each—Henry P. Poli and James J. Stevenson, Pittsburgh, Pa.; Frank B. Dougherty, Wilmington, Del.; George Connor, Washington, D. C.; Herbert Struppmann, Woodhaven, L. I., and Herbert Neuman, Jamaica, L. I.

Four third prizes of $200 each—J. Herschel Fisher, Austin, Texas; Frederick E. Emmons Jr., and Don Emmons, Los Angeles, Calif.; J. Byers Hays, Russell Simpson and Bryon Hunsicker, Cleveland; Tallie B. Maule, Sand Springs, Okla., and George W. Edwards, Oklahoma City.

Larger class (24,000-32,000 cu. ft.)

Four first prizes of $1,000 each—Hays, Simpson & Hunsicker of Cleveland, Joseph Schilowitz, Jersey City, N. J.; Hugh Stubbins and Marc Peter Jr., Boston; Clarence W. Jahn and Edwin A. Wagner, Milwaukee.

Four second prizes of $300 each—Stephen J. Alling, 101 Park Avenue, New York City; R. C. Levanas, Los Angeles; John Hironimus, 5 East Fifty-seventh Street, New York City; Marshall H. Walker, Sheveport, La.

Four third prizes of $200 each—Maxwell Arden Norcross, Cleveland; Malcolm P. Cameron and Howard A. Topp, Los Angeles; Lois Wilson Worliey, Norman, Okla.; Yukio Kako, Los Angeles.

Neighborhood Planning.

A $1,000 first prize was shared by W. Stuart Thompson, Donald McLaughlin and Joseph Whitney of 19 West Forty-fourth Street, New York City. The $500 second prize was shared by George W. Wickstead, Philadelphia; S. Dale Kaufman, Philadelphia, and R. Andrew Bustard, Collingdale, Pa. James M. Berkey, Spokane, Wash., won the third prize of $200.

R. Roy Kelly of Los Angeles, chairman of the awarding jury, declared he was impressed by the fact that the designs show a determination to get away from sterotyped designs of homes.

Conrad N. Lauer, Philadelphia, A. G.A. vice-president, presided. Other gas industry speakers were Alexander Forward, A.G.A. managing director, Hugh Cuthrell, president, Gas Exhibits Inc., Stanley Finch, Brooklyn Union Gas Co. J. F. Quinlan, director, Home Appliance Planning Bureau, made the arrangements for the nationwide contest.

Two-Part Gas Furnace Is Installed at Navy Yard

With the construction of a two-part gas furnace for annealing welds on the turret rings of battleships, a new gas application has been inaugurated at the Brooklyn Navy Yard. The new furnace was built by the Navy engineers in the yard's machine shop from designs drawn by Navy draftsmen with the aid of the Brooklyn Union Gas Co.

Each turret ring on a battleship consists of 10 sections which must be welded together and then quickly annealed to prevent buckling. For this reason Navy engineers decided to use gas because of its flexibility and convenience in operation. For annealing, the weld has to be raised to 1200 deg. F which results in the use of about 1000 cu. ft. of gas per hour for 14 hours required for each of the nine annealing processes on each turret ring.

■ ■

W. F. Knode Heads Board

W. F. Knode, petroleum engineer, formerly of Corpus Christi, Texas, and associated with Parker-Foran and Boatright, has recently been appointed chairman of the Alberta, Canada, oil and gas conservation board.

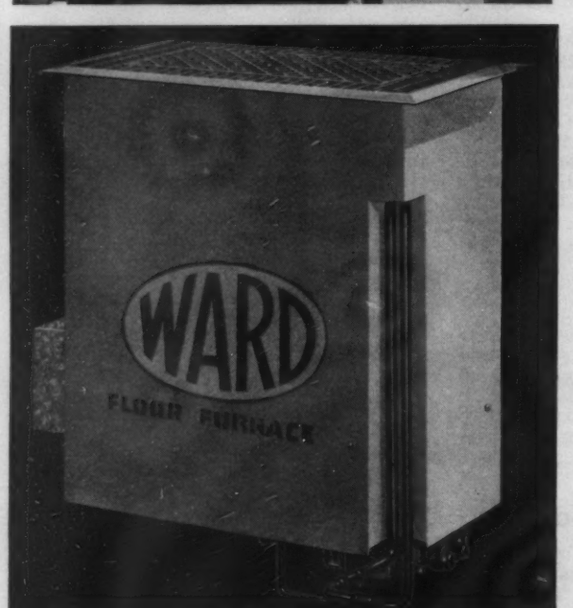
Bullion to Direct Sales and Advertising for Cleveland Co.

The Cleveland Co-Operative Stove Co. has announced the appointment of Thomas E. Bullion to the position of director of sales and advertising.

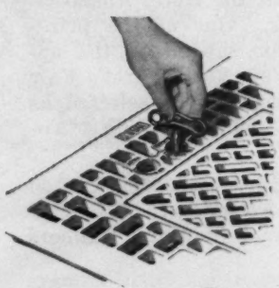
Mr. Bullion has been in the household appliance industry in a major capacity for 24 years. He will make his headquarters at the company's main office and factory in Cleveland, Ohio.

The Cleveland Co-Operative Stove Co. manufactures a complete line of gas ranges under the trade name "Grand."

There they



IT ALMOST THINKS FOR ITSELF!



A twist of the key in the floor register and the 1938 completely automatic WARD FLOOR FURNACE goes to work. Bilt-in Thermo-Control, a thermostat that is *part of the furnace* and therefore contacts *all* the room air as it passes through, *automatically* controls the temperature. WARD'S exclusive Cradle Circulation *automatically* keeps the air in gentle movement, reconditions it 3 to 6 times an hour. WARD'S Automatic Pilot, proven in repeated tests to be remarkably sensitive and quick-acting, shuts off the gas flow immediately should flame be extinguished.

The WARD FLOOR FURNACE is a "complete package"... all controls and accessories built in. Installation is easy ... no wires to run, no external parts, no fragile connections. Just drop the furnace into floor opening, connect to vent and gas line, and it's ready to build and protect load for years to come.

YOUR LOAD IS AS GOOD AS THE APPLIANCE YOU SELL

GAS COMPANY MERCHANDISERS ARE "OFF TO THE RACES" FOR 1938 HEATING PROFITS WITH THE NEW, COMPLETELY AUTOMATIC WARD FLOOR FURNACES!

After 29 years of furnace building, a picture of a shipment of WARD FLOOR FURNACES isn't news to us. And we expect it isn't news to you, either, that a whole lot of gas utilities throughout this country are using WARDS to win consumer satisfaction, build load and make a nice profit for their merchandising departments.

Here's the real reason we had these pictures taken of the first 1938 shipment of our *completely automatic* floor furnaces. We wanted them to remind you that if you're looking for a winner in this year's race for heating profits you can't do better than to *play the favorite!* And that's the WARD! More than 350,000 installations prove that WARDS are a favorite with people who want clean, healthful, economical warmth in their homes. They're good in one-story stores, shops and offices, too.

WARD FLOOR FURNACES, guaranteed for ten years, are permanent equipment. They become a part of the house and they stay put. That protects your load for years to come. Isn't it worth considering?

We'll gladly send you our catalog and price list, with the whole story of what WARD can do on your lines.

Would you like a copy of our new

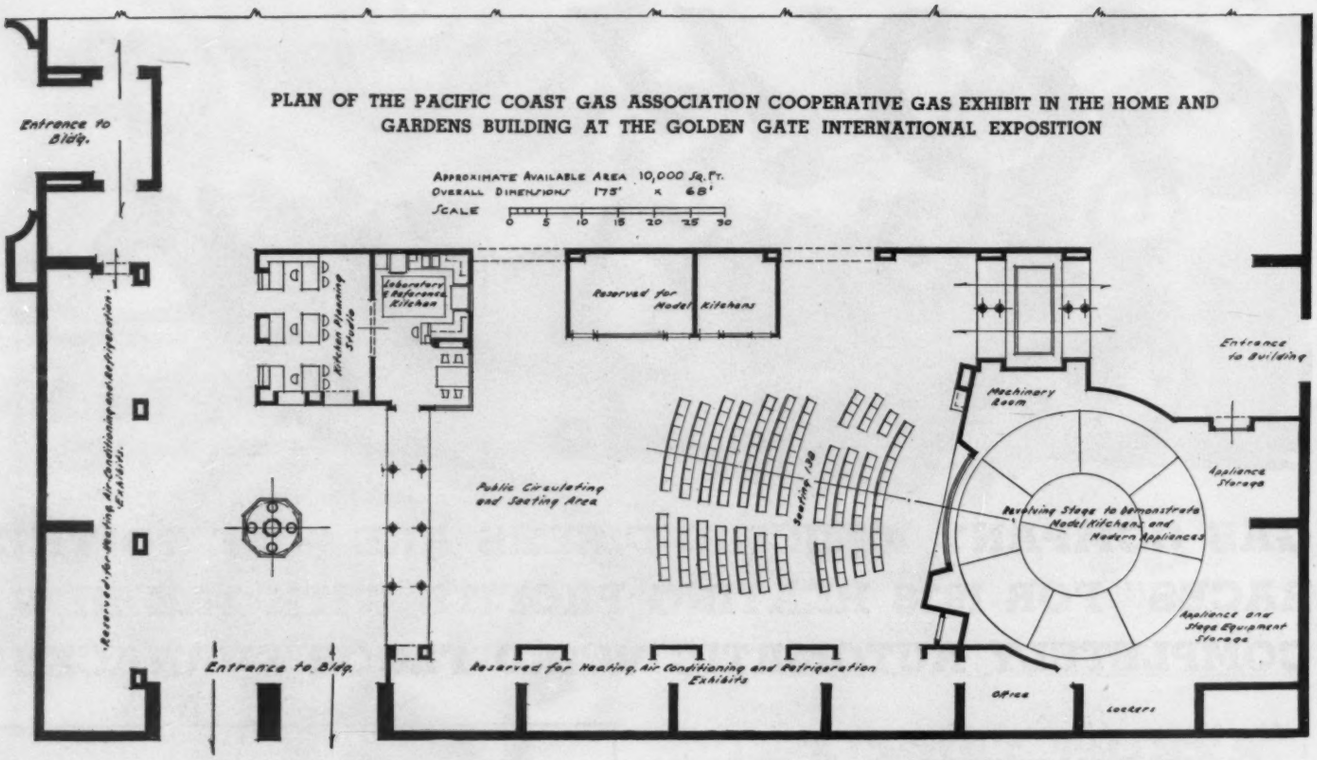
INSTALLATION MANUAL

With the rapid rise in popularity of floor furnaces there has come a need for a comprehensive guide to good installation practice. Our engineering department recently compiled such a manual for use of our own installers and sales force. It has been so successful that we have made it up in a booklet . . . fifty pages of information, with diagrams, on how and where to install floor furnaces. A gas company executive wrote us, "I have carefully read your Manual and it is comprehensible and complete in every way. We are sure it will be a big aid to the gas industry." Would you like a copy? It is yours for the asking.

WARD HEATER COMPANY

LOS ANGELES, CALIFORNIA

SELL THE BEST . . . . SELL WARD FLOOR FURNACES


PLAN OF THE PACIFIC COAST GAS ASSOCIATION COOPERATIVE GAS EXHIBIT IN THE HOME AND GARDENS BUILDING AT THE GOLDEN GATE INTERNATIONAL EXPOSITION
Approximate Available Area 10,000 Sq. Ft.
Overall Dimensions 175' x 68'
Scale
0 5 10 15 20 25 30
Entrance to Bldg.
Laboratory & Reference Kitchen
Kitchen Planning Studio
Reserved for Model Kitchens
Entrance to Building
Machinery Room
Appliance Storage
Public Circulating and Seating Area
Seating for 350
Revolving Stage to Demonstrate Model Kitchens and Modern Appliances
Appliance and Stage Equipment Storage
Reserved for Heating, Air Conditioning and Refrigeration Exhibits
Entrance to Bldg.
Reserved for Heating, Air Conditioning and Refrigeration Exhibits
Office
Lockers

P. C. G. A. Plans Golden Gate Fair Exhibit

PACIFIC Coast Gas Association has presented to its appliance manufacturers plans for the cooperative gas exhibit at the Golden Gate International Exposition scheduled to open February 18, 1939 and close December 2, 1939.

The Exposition will occupy Treasure Island, a 400 acre man-made island in San Francisco Bay. Transportation is furnished by ferry and by a causeway running from the Oakland-San Francisco Bridge, and it is expected that 20 million persons will visit the exposition.

A sketch, (see above) showing the general form which the gas exhibit will take, has been submitted to the manufacturers so that they may plan their participation, reserve space, and start work on individual exhibits.

The cooperative gas exhibit is under the sponsorship of the Pacific Coast Gas Association, and control will rest in the Gas Exhibit Committee whose membership is: R. E. Fisher, vice president in charge of sales, Pacific Gas and Electric Co., chairman; H. R. Basford, president, H. R. Basford Co.; H. L. Farrar, president, Coast Counties Gas and Electric Co.; Don Fleming, manager, Electrogas Division, Payne Furnace and Supply Co.; C. R. Graham, secretary, Jas. Graham Mfg. Co., and R. A. Hornby, vice president, Pacific Lighting Corp.

Design and construction of the cooperative exhibit will be under the direction of L. E. Lindsay, Seattle Gas Co. Because of Mr. Lindsay's experience in engineering architecture and exhibition planning, he was granted a leave of absence from his company for the preparation of this exhibit.

The 10,000 sq. ft. of floor space in the Homes and Gardens Building will be devoted entirely to display of domestic uses of gas. Appliances will be shown only in their appropriate surroundings—ranges and refrigerators in kitchens, and heating systems in basements.

Manufacturers' wishes will be consulted in the design of the settings in which their appliances appear, but the committee reserves the right to specify the size, type, and models of appliances to be displayed in the limited number of settings which will be provided, in order to keep the exhibit unified. There will be no manufacturers' booths and no floor space will be sublet.

Total cost of the gas exhibit is estimated to be $140,000. More than 70 per cent of this sum has already been subscribed to by gas companies, and participating manufacturers will be asked to subscribe the balance.

Participation in the exhibit will cost manufacturers $3,000.00 each for gas ranges, $3,000.00 each for gas central heating and air-conditioning systems, $1,000 each for gas water heaters, and $1,000.00 each for other domestic appliances except refrigerators. The cost of participation includes exhibition for the entire period of the Exposition.

■ ■

Waukegan Paper Publishes Gas Range Section

The North Shore Gas Co., Waukegan, Ill., sponsored a special Gas Range Section in the Waukegan News-Sun during the company's Happiness Week promotion project, held May 23-28. The special eight-page newspaper supplement included news items on the comfort and luxury features of gas ranges as well as cooking hints to housewives. Because of the success of this promotion, dealers have asked the newspaper and gas company to cooperate again this fall in a similar promotion.

■ ■

P. G. and E. Replaces Lines

Pacific Gas and Electric Co., San Francisco, has started replacing its pipeline from Dixon to Davis with a 10-in. line to increase the capacity of the system in that area.

Six New Garland Ranges . . . .

FOR RESTAURANTS • LUNCH ROOMS • CAFES

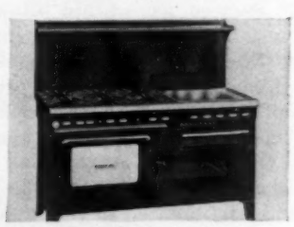
and look at these prices!

83-24CCX with High Shelf—Six open top burners, griddle and broiler, two ovens. Overall —59" wide, 34" deep, 54½" high $192

66-24CX with High Shelf—Six open top burners, one oven. Overall—36" wide, 34" deep, 54½" high. $110.50

62-22CX with High Shelf—Four open top burners, griddle and broiler, one oven. Overall—47" wide, 28½" deep, 54½" high . . $122.75

72-24CX with High Shelf—Six open top burners, griddle and broiler, one oven. Overall—51½" wide, 28½" deep, 54½" high. $132.25



82-24CX with High Shelf—Six open top burners, griddle and broiler, one oven. Overall—59" wide, 34" deep, 54½" high . . $146.50

84-24CCX with High Shelf—Ten open top burners, two ovens. Overall—59" wide, 34" deep, 54½" high $175.75

Here's the same rugged stamina, the dependability, cooking efficiency, and economy which have made Garland heavy-duty ranges the choice of America's most famous hotels and restaurants, at prices which make Garland quality and performance practical and economical for even the smallest establishment.

In this new Garland line you will find a unit which provides exactly the cooking facilities to meet the requirements of every installation. This, in itself, is an important factor in economical and efficient operation. These new Garlands have been specifically designed to provide a maximum of cooking capacity in a minimum of space. They will have an immediate appeal for small restaurants, taverns, clubs, lodges, churches, tea rooms—in fact, wherever space saving, low first cost, and low operating cost are important.

All prices are F.O.B. Detroit and include oven heat controls, oven insulation, and high shelves. Deduction may be made if ranges are wanted without oven heat control. Prices shown are for ranges equipped for use with manufactured or natural gas. Ceramic radiants, for even more efficient broiling, are available at slight extra cost. Send now for complete information and discounts.

GARLAND

DETROIT · MICHIGAN STOVE CO · DETROIT

F. X. Mettenet, vice-president, Peoples Gas Light and Coke Co., Chicago, addressing the Home Service Conference and Training Course, held in Kansas City, June 7 to 10.

A. G. A. Committee Sponsors Home Service Conference

REGISTRATION at the second annual Home Service Conference and Training Course, held in Kansas City, Mo., June 7-10, totalled 200 delegates, including 73 representatives of schools and colleges, in addition to a representative group of workers already in Home Service. The conference was sponsored by the A.G.A. Home Service Committee.

Mildred Clark, chairman of the Home Service Committee, who presided at 11 sessions, outlined at the opening meeting the purpose of the course, the second conference of its type to be held. The first Home Service Conference was held in 1937 at the A.G.A. Testing Laboratory in Cleveland, Ohio, at the request of educators who maintained that this type of course would assist in picturing what Home Service work involved.

Home Service as an aid in sales promotion, the keynote of the meeting, featured skits and demonstrations. Home call work. its procedure and preparation, was the responsibility of the Home Service Department of the Oklahoma Natural Gas Co. Louise Anderson introduced the material and participated in the dialogue as Mrs. Home-maker in two skits with Harryette Hunter and Rosemary Locke acting as home service girls

Drama in cooking demonstrations was illustrated by Elizabeth Lynahan, Peoples Gas Light & Coke Co., Chicago, who presented a model demonstration, which showed efficient features of the equipment.

The other program skit, "Drama in Water Heating," brought out in amusing fashion the need for automatic hot water. It was presented by the home service department of the Kansas City Gas Co. under the direction of Colleen Fowler.

Group conferences, included in the week's program, offered an opportunity for students present to discuss home service work with experienced home service directors. The committee assigned to direct the conferences included: Nellie Freedeen, Vivette Gorman, Peoples Gas Light and Coke Co., Chicago; Anne Sutter, Pittsburgh; Vera Ault, Denver; Mary Louise Hurster, St. Louis; Ruth Menoher, Lincoln; Clarabel McLeod, Muncie; Ruth Bush, Ann Arbor; and Colleen Fowler and Betty Boyle, Kansas City.

"What the Sales Manager Expects of Home Service," presented by F. X. Mettenet, vice president, The Peoples Gas Light and Coke Co., brought out ideas as to what the sales manager desired and outlined means of accomplishment. "There's Nothing Like Gas," the slogan of national advertising, was discussed by W. E. Leverette, Nashville Gas & Heating Co.

Kitchen planning was given the subject "Kitchens Planned for Women to Work in." Ada Bessie Swann, director, Home Service Center of *Woman's Home Companion*, and former home service director for Public Service Co. of N. J., presented this information. New promotional developments in kitchens were described by R. J. Canniff, Ruud Manufacturing Co.

The story of the A.G.A. Laboratories was outlined with the use of slides, by Dr. F. E. Vandaveer, Cleveland.

Conference entertainment opened with a "get-acquainted" dinner, June 7, with the compliments of the A.G.A.E.M. W. E. Derwent, George D. Roper Corp., acted as host at the dinner in his capacity as a member of the Board of Directors of the manufacturers association.

F. M. Rosenkrans, The Gas Service Co., Kansas City, Mo., was in charge of local arrangements for the conference. The setting up of the display kitchen with different gas equipment entered each day was taken care of by the Kansas City Gas Co.

■ ■

Baker-Glendive Gas Field Extended Into No. Dakota

WITH the recent extension of the Baker-Glendive gas field, located in southeastern Montana, into southwestern North Dakota, the Montana-Dakota Utilities Co., Minneapolis, Minn., has connected three wells in the North Dakota area to the company's distributing system. Several gas wells were drilled in southwestern North Dakota a few years ago, but a lack of market for this additional gas supply has delayed the Montana-Dakota Co. in connecting them with their distribution system until this year.

The Montana-Dakota Utilities Co. has been supplying gas to cities in eastern Montana and western North Dakota and western South Dakota for the past 12 years. According to W. L. Hayes, of the Montana-Dakota Co., the company will probably take an increasing portion of its gas from the southwestern North Dakota field as the company's market grows. As the Baker-Glendive field is enlarged, Mr. Hayes believes that gas will eventually be produced in South Dakota. The field is located at the intersection of the states of Montana, North Dakota, and South Dakota.

■ ■

Ohio Valley Gas Corp. Merges With West Virginia Corp.

The proposed merger of Ohio Valley Gas Corp. into and with West Virginia Gas Corp., Charleston, W. Va., became effective April 30, 1938, following the authorization of the action by the stockholders of the two corporations at their respective meetings, held April 27.

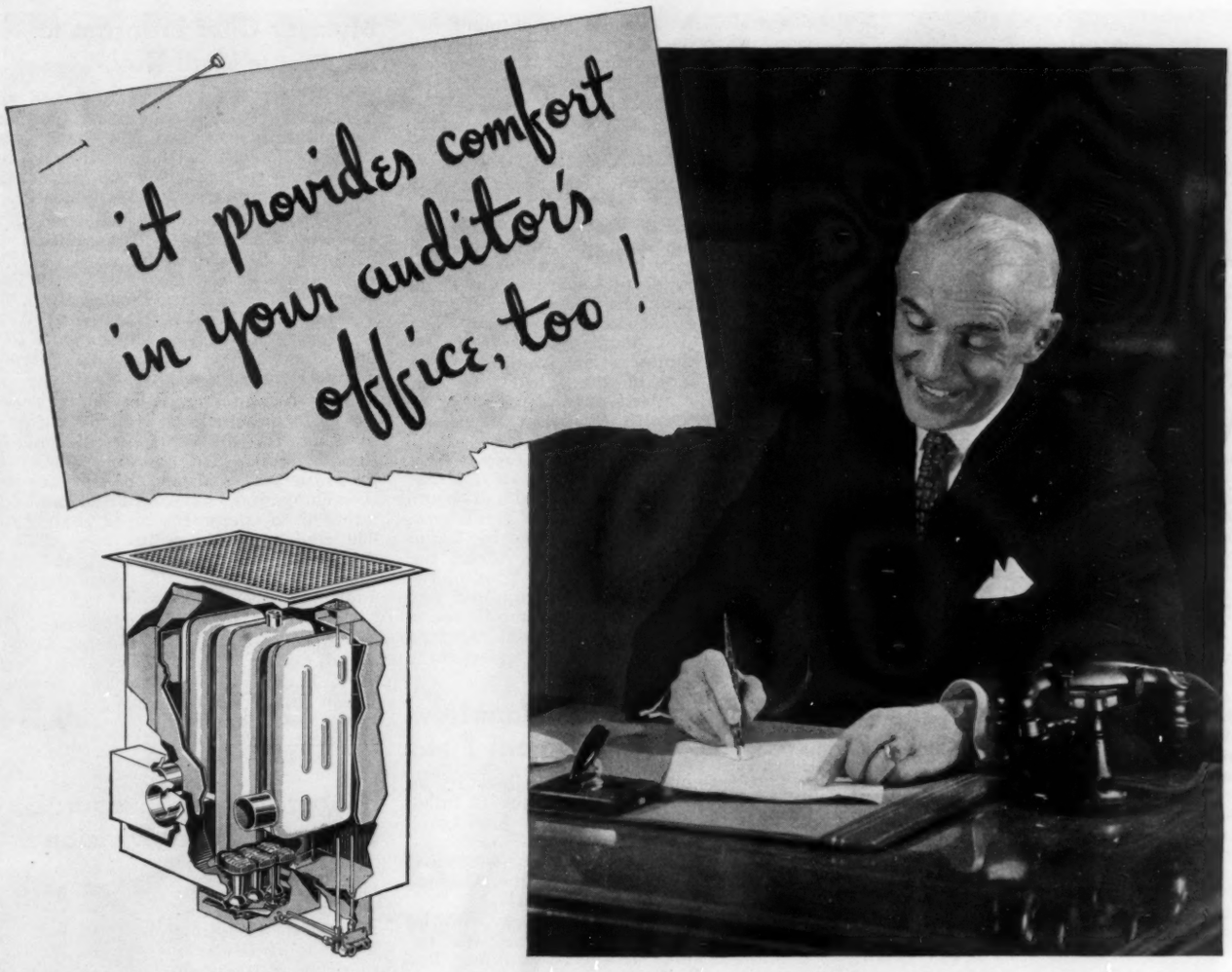
With the consummation of the merger the separate existence and corporate name of the Ohio Valley Gas Corp. ceased, and the board of directors of the West Virginia company became the board of directors of the merged company. According to Frank R. Hurlbutt, counsel for the West Virginia Corp., no changes will be made in operations or personnel.

■ ■

"Heat and Its Control" Film Produced by Johns-Manville

Johns-Manville, manufacturers, have recently produced a sound film, entitled "Heat and Its Control," presenting an actual visualization of the nature of heat and the story of its use and methods of conservation. The first official showing of the film was attended by 150 representatives of the industrial and technical press at New York City.

Publication of a handbook, "Heat," which supplements the movie has also been announced by Johns-Manville. Copies of the book are available on request from Johns-Manville, 22 East 40th St., New York City. The handbooks are also distributed to those attending a showing of the new heat and control film.



The Payne Floor Furnace is one of the greatest load builders on the National Heating Scene.

That's because its exceptional efficiency and economy of operation sell the *idea* of GAS—tell people that GAS is the ideal fuel for *all* purposes.

The Payne Floor Furnace is one of the most popular gas-fired heating units in the land today. It should be.

Payne has devoted a quarter of a century to the making of gas fired appliances *exclusively*. And today, in America's most modern furnace plant, Payne produces America's most modern gas-fired heating appliances!

THE IDEAL FUEL GAS

Payne

FURNACE & SUPPLY CO., INC.

BEVERLY HILLS, CALIFORNIA

PAYNE FORCED AIR UNIT

Ideal for the small home, or the home without a basement. Heats in winter — ventilates in summer. Operates from service porch, kitchen or closet. Requires little floor space.

THERE IS A PAYNE GAS FIRED APPLIANCE FOR EVERY HEATING NEED

W. R. TELLER

W. M. COUZENS

Couzens Leaves Laboratories To Be Succeeded by Teller

W. M. COUZENS, research engineer, American Gas Association Testing Laboratories, Cleveland, Ohio, resigned July 1, to become associated with Gaffers and Sattler, Los Angeles manufacturers of gas appliances. In appreciation of his outstanding service of 12 years in the gas industry, Mr. Couzen's associates tendered him a farewell dinner on June 6, at the Fermay Hotel in Cleveland.

Mr. Couzen's duties will be taken over by W. R. Teller who has been assistant research engineer for several years. Mr. Teller, a graduate in Mechanical Engineering from Case School of Applied Science, joined the Laboratories in 1930. For the past eight years he has had experience in every department of the Laboratories, including testing, field inspection and requirements committee activities. For several years, under F. O. Suffron and Mr. Couzens, he actively supervised all research activities at the Laboratories. He is an authority on the technical aspects of gas mixing.

Mr. Couzens, who joined the Laboratories in 1926, spent his first years in testing, research, and inspection work. He became chief inspector and subsequently organized the Pacific Coast Branch of the Laboratories in Los Angeles, acting as supervisor for nearly three years. Mr. Couzens returned to Cleveland Laboratories in 1933 to become the head of the Research Department.

■ ■

Citizens Gas and Coke Issues Pocket Manual

The Citizens Gas and Coke Utility, Indianapolis, Ind., has recently distributed a pocket-size manual entitled, "Profit by Helping Gas Do the Four Big Jobs." Designed as an employee sales-assistance plan, the 24-page manual was prepared by L. B. Breedlove, director of Public Relations for Citizens Gas and Coke.

The company is planning to issue in the near future a loose-leaf binder in which supplementary bulletins with appliance information may be inserted for reference.

■ ■

Philadelphia Co. Personnel Directed by Donaldson

Howard L. Donaldson is the newly appointed director of personnel for the Philadelphia Co. and subsidiary companies. According to an announcement by Frank R. Phillips, Philadelphia president, Mr. Donaldson's appointment became effective May 1. Mr. Donaldson was formerly manager of the employment and training divisions of the personnel department.

■ ■

Lone Star Co. Continues Gas Service During Flood

EMPLOYEES of Lone Star Gas Co. and Community Natural Gas Co. scored a victory over Texas flood waters in April when, despite a break in a 12-in. main line near Hillsboro, Texas, gas service to Hillsboro and Whitney was continued. The main line gate valve, controlling the situation, was located by three members of the Waco pipe line district who rowed over a half-mile of flood waters with heavy wrenches to close the valve.

A freak flood in Hackberry Creek drowned out the lowlands around Hillsboro and broke Line-L from Joshua two and a half miles northwest of Hillsboro. While the Waco crew, headed by Eldon Glenn, worked to reach the valves, the Joshua crew, under George Minton, repaired the line. Line-L supplied gas from West Texas to points south, but it was possible for the company to supply gas from other fields in emergency.

■ ■

Oklahoma Natural Plans New Line Into West Cement Field

The Oklahoma Natural Gas Co., is preparing to let a contract for 15 miles of natural gas transmission line tying in with its main trunk line north of Farwell Station and extending westward to the western sector of the Cement gas field of Caddo county, Okla.

Twelve miles of the line will be solid welded 12 in. joints and the remaining 3 miles will be 10-in. pipe. The new line will be connected to large gas wells which have been discovered in the west Cement field without available market for the gas.

■ ■

Prevention of Natural Gas Waste Shown at Exhibit

The waste of natural gas resources can now be stopped almost entirely through the use of cement in production, as demonstrated at the International Petroleum Exposition, Tulsa, Okla. Cement is poured down inside the piping of a well, subjected to great pressure which forces the cement out under the bottom of the pipe and up in the hole around the pipe, filling the space between pipe and earth and sealing off water and gas without disturbing the flow of oil.

■ ■

Browning, Mont., Votes For Natural Gas

Browning, Mont., at a special election held in May, approved a proposal to bring natural gas to that community. A. B. Cobb, Wyoming and Montana operator, one of the applicants for the Browning franchise, has announced that engineer's plans and estimates are now being drawn for submission to Browning officials. At the present time Mr. Cobb is considering the construction of a pipe line from his well in the North Cut Bank area to Browning.

Mystery Chef Program to Be on Air Until Nov. 24

CONTRACTS have been signed with the National Broadcasting Company, McCann-Erickson, Inc. and the Mystery Chef for a continuation of the Mystery Chef radio program for the period May 31 to November 24, 1938, inclusive.

The facilities of the following NBC stations will be used to broadcast the program: WEAF, New York; WNAC, Boston; WEAN, Providence; WTAG, Worcester; WCSH, Portland; KYW, Philadelphia; WBAL, Baltimore; WGY, Schenectady; WTAM, Cleveland; KDYL, Salt Lake City; KFI, Los Angeles; KGW, Portland; KOMO, Seattle.

Fifty-two companies having in service 3,419,673 meters have signed up for the program for the continued six months' period. Since the inauguration of the program two and one half years ago, the companies have ordered and distributed to customers more than 2,200,000 copies of the recipe book, "Be an Artist at the Gas Range," and more than 625,000 pamphlets containing 27 additional recipes by the Chef.

Officers of Regional Advertisers, Inc. are: president, N. T. Sellman, Consolidated Edison Co. of New York; treasurer, Hugh H. Cuthrell, The Brooklyn Union Gas Co.; secretary, Charles W. Person, A.G.A. director of publicity and advertising.

■ ■

Seaberg Heads Pittsburgh Equitable Meter Division

G. E. SEABERG

George E. Seaberg has been appointed sales manager of the Coupling and Fitting Division of the Pittsburgh Equitable Meter Co., Pittsburgh, Pa. Mr. Seaberg's long experience makes him well qualified to head this newly created department. For the past 12 years he was associated with the Dresser Manufacturing Co. as manager of their Water Works Division and prior to that, was with the Peoples Gas Light and Coke Co., Chicago, in an engineering capacity.

■ ■

Hemphill Has Position With Consolidated Gas Utilities

J. H. Hemphill took over, on June 1, the duties of office manager of the Consolidated Gas Utilities Corp., Oklahoma City. He suceeeds Lester Kuhlmeier, who died April 29.

Mr. Hemphill, before assuming his new position, was secretary-treasurer with Harris and Haun, Blackwell, Okla.

■ ■

Record Gas Well Reported

The largest gas well in New Mexico has been reported from the Eunice district, Cities Service Co., No. 3-A Closson. At 3542 ft. the well blew out. It is estimated to be making 250,000,000 ft. of gas.

WEDGEWOOD PRESENTS

A Beautiful New SIX-BURNER DOUBLE OVEN MODEL

14 NEW WEDGEWOOD FEATURES EVERY WOMAN WILL WANT!

- FLUSH-TO-WALL CONSTRUCTION
- RECESSED SOLID BASE
- FOLDING COVER-TOP
- SMARTLY STYLED LAMP AND CLOCK
- DISTINCTIVE HARDWARE STYLING
- STREAMLINE BACKGUARD AND VENT
- 3-SECTION PORCELAIN ENAMEL TOP
- SEPARATE PASTRY AND BAKING OVENS
- 6-BURNER OPEN OR CLOSED TOP
- REMOVABLE ALUMINUM GRIDDLE
- SPEED-PLUS-SIMMER BURNERS
- SUPER-SPEED GIANT BURNERS
- HI-SPEED LOW-TEMPERATURE OVEN
- ASTOGRIL BROILER

WEDGEWOOD

Designed to use natural, manufactured or bottled gas.

THE MODERN GAS RANGE
MAKES FRIENDS FOR GAS

JAMES GRAHAM MANUFACTURING CO. • SAN FRANCISCO, LOS ANGELES, NEWARK, CALIF.; PORTLAND, ORE.

SALES SLANTS

A month by month presentation of experiences on the sales front.

What He Knew About Water Heaters Was Enthusiasm

ONE of our leading gas water heater manufacturers tells this story. It happened several years ago, when the popular selling of automatic gas storage water heaters was in its infancy. One of the middle-western gas companies had just staged a very successful campaign, and the manufacturer was invited to talk to the sales boys at one of their regular sales meetings. The manufacturer, because there were several new men in the organization, spoke in great detail about the construction of the water heater itself, and tried to leave with every man a conviction of its reliability, efficiency and those other things that go to bolster the sales effort of the man in the field. At the end of his talk he asked if there were any questions.

Among the men who had been listening very intently was "Mac," a veteran salesman, but a comparative newcomer in the gas water heater business. He had led the entire organization during the campaign in sales made, and had the remarkable total of 69 completed sales to his credit.

"I'd like to ask a question," said "Mac." "Where in hell's the coil in the heater?"

As the manufacturer says, the point needs no laboring. The storage water heater was in its infancy and the popular conception of an automatic job was the instantaneous type. And here was a salesman, who had sold 69 storage water heaters in a 30 day period and seriously, he didn't know a thing about its mechanical operation or construction. But what he did know was that it supplied hot water at reasonable cost, at the turn of a tap any hour of the day and night, and that it was a boon to the user. And this was what he had sold.

The secret of getting the business, "Mac" had found, was enthusing the customer with what the gas water heater would do for the customer.

Ask Yourself Another

THINK about your last several* contacts with gas appliance prospects. See if you can honestly answer "yes" to every bit of the following:

Did I regard each objection merely as a question, and proceed to answer all of them in a courteous and tactful manner?

Did I skillfully avoid being sidetracked by trivial objections and excuses?

Did I offset my prospect's reasons for not buying with an array of stronger and more logical reasons why she should buy?

Did I realize that information on the *merits* of gas appliances is the most powerful persuasion possible?

Did I lead my prospective purchaser to the closing point repeatedly?

Did I make her agree on minor points, and so build up a series of affirmative answers making closing an easy and logical step?

Did I feel that it was to the prospect's actual interest to buy, and make her realize that fact?

Did I present my story in a systematic manner and clinch each sales point?

Did I *sell* my prospect on gas appliances, or did I merely *tell* her about them?

Well, DID YOU?

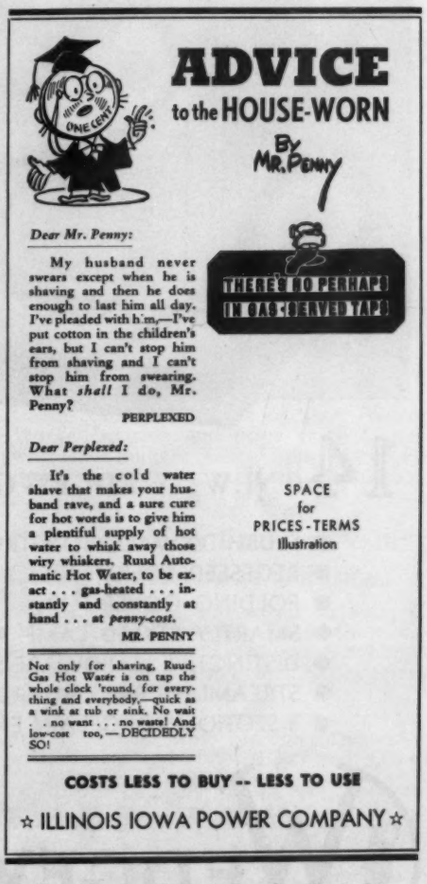
*A letter issued by Philgas Department, Philgas Petroleum Co., Bartlesville, Okla., April 22, 1938.

New Film Gives Salesmen Food for Thought

IN the Warner Bros. picture "White Banners" recently released, and which, by the way, every gas man should make a special point of seeing, actress Fay Bainter in a crucial scene with actor Claude Rains, says to him, "The biggest victories in life are those founded on previous defeats."

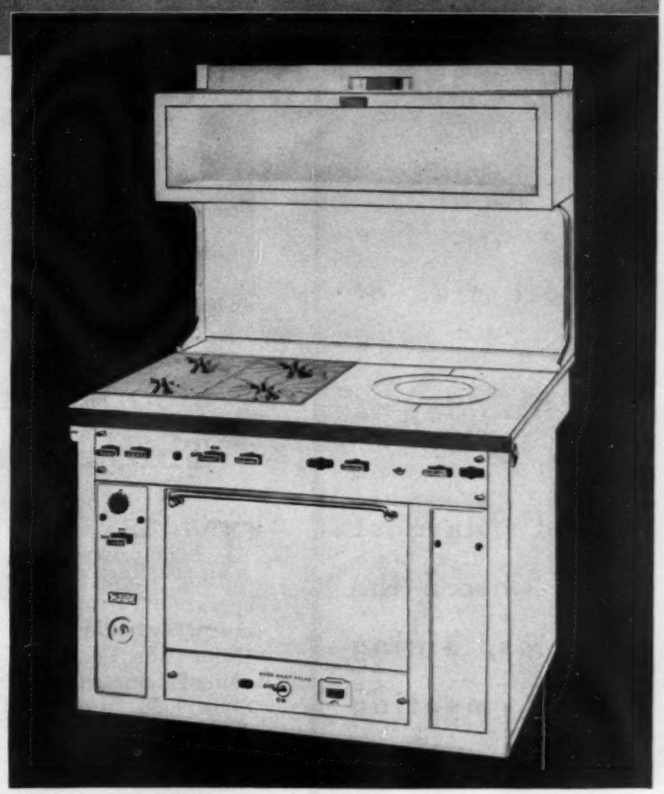
This is a grand thought for every gas salesman to carry around with him. If Robert Bruce had quit after innumerable defeats at the hands of the English, if Thomas A. Edison had stopped when experiment after experiment failed, if. . . . but why go on? We know that defeats did not discourage them, but on the contrary, spurred them on to greater effort.

The story of the American gas industry is the story of men and women who never knew when they were licked. Today, the future of the industry rests squarely on the shoulders of those fighting gas salesmen, who seeking no favors, or fearing no odds, are out day in and day out, two-fistedly selling the best fuel service available . . . gas.


ADVICE
to the HOUSE-WORN
By MR. PENNY
ONE CENT
Dear Mr. Penny:
My husband never swears except when he is shaving and then he does enough to last him all day. I've pleaded with him,—I've put cotton in the children's ears, but I can't stop him from shaving and I can't stop him from swearing. What shall I do, Mr. Penny?
PERPLEXED
Dear Perplexed:
It's the cold water shave that makes your husband rave, and a sure cure for hot words is to give him a plentiful supply of hot water to whisk away those wiry whiskers. Ruud Automatic Hot Water, to be exact . . . gas-heated . . . instantly and constantly at hand . . . at penny-cost.
MR. PENNY
Not only for shaving, Ruud Gas Hot Water is on tap the whole clock 'round, for everything and everybody,—quick as a wink at tub or sink. No wait . . . no want . . . no waste! And low-cost too,—DECIDEDLY SO!
SPACE for PRICES - TERMS Illustration
COSTS LESS TO BUY -- LESS TO USE
☆ ILLINOIS IOWA POWER COMPANY ☆

Attention catching humor typifies this cooperative gas water heater advertisement, one of 14 now being used by Illinois Iowa Power Company.

WHAT? A WHITE HEAVY DUTY GAS RANGE?



No, but as far as the cleanability of the Magic Chef is concerned it might as well be white!

● For many practical reasons, Magic Chef Heavy Duty Gas Ranges are made in black-exterior finish. But, into Magic Chef are built many exclusive features making for thorough, easy cleaning. Your Magic Chef installation can be as spotless—inside and out—after years of service, as it was the day it first brought greater cooking efficiency and economy into your kitchen.

AMERICAN STOVE COMPANY

Boston • New York • Atlanta • Cleveland • Chicago
St. Louis • Philadelphia • San Francisco • Los Angeles

Phone or write our nearest branch, and let us show all the features which make Magic Chef the easiest to clean as well as the most economical and efficient.

Complete and Flexible Line of Ranges, Roasters, Broilers, Bakers

LOOK FOR THE RED WHEEL WHEN YOU BUY A MAGIC CHEF

Beyond the gas mains use Pyrofax tank gas {East of Rockies}

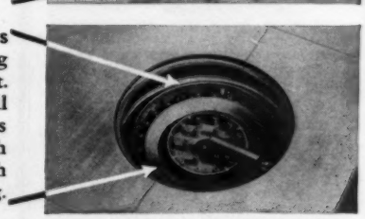
GAS IS YOUR QUICK, CLEAN, ECONOMICAL SERVANT

Magic Chef
AMERICAN STOVE COMPANY

Three of the exclusive Magic Chef features that promote greater cleanliness and efficiency

Sanitary Burner Trays for Grate Tops are extra deep, to catch boilovers. The entire tray and burner is easily removed for thorough cleaning. Burners cannot clog because port openings are on side, and boilovers run past into tray.

Sanitary Burner Trays for Hot Tops are directly under lid and ring seams—one under each joint. Burners and flue passages will not clog, because boilovers and grease seeping through are caught in these trays, which are easily removed for cleaning.



Sanitary Coved Rim at back edge of burner top prevents seepage into the flue box, and makes cleaning much easier. Clogging of flues, and odors from greasy deposits are eliminated in the Magic Chef. Oven bottoms also have this coved rim around edges, keeping spillovers from combustion chamber.

AIR CONDITIONED

of course—the largest area of modern hotel air conditioning is found in the world's largest hotel, where all the lobbies, dining rooms, meeting rooms, and a substantial number of guest rooms are air cooled—delightfully

STEVENS HOTEL CHICAGO

On Michigan Avenue
Overlooking Chicago's natural air-conditioner—Lake Michigan

The word, GAS, in large block letters and six feet high attracted many visitors to Brooklyn Union Gas Co.'s booth at the recent Long Island National Home Show.

Cooperative Gas Exhibit Attracts Throngs at Long Island Home Show

THOUSANDS of prospective home owners viewed the gas exhibit presented through the cooperation of fourteen gas appliance manufacturers and the Brooklyn Union Gas Co., N. Y., at the fifth annual Long Island National Home Show held from April 30 to May 7, Jamaica, N. Y.

The gas exhibit, which was similar in theme to the New York World's Fair of 1939, occupied 3,600 sq. ft. in the new Jamaica armory, directly facing the information booth. In the foreground, rising to a height of 41 ft. was an imposing tower, bathed in floodlights, and flanked on either side by the word GAS, in large block letters six feet high.

Fourteen animated displays, each dramatizing some aspect of the superiority of gas fuel, were features of the exhibit. These served to demonstrate to the visitors the superiority of gas for cooking, refrigeration, water heating and house heating.

In addition to the exhibit The Brooklyn Union Gas Co. presented two cookery demonstrations daily in the armory's gun room. At the afternoon session a slide film, with sound, was also shown. In the evening a skit, "The Bride Steps Out," was presented.

Wire Cloth Manufacturers Use Gas To Clean Product

Four manufacturers of steel wire cloth of York and Hanover, Pa., are now employing a new gas process for cleaning or oil removal (after weaving) before electro-galvanizing. Using small gas-fired ovens with heat traveling counterflow to the wire cloth, they are successfully cleaning steel wire cloth, 30 to 48 in. wide, of 12 to 16 mesh. The cloth passes over rollers for three horizontal passes in the oven; an air seal is created in the vertical feed and delivery legs of the oven. Temperature control is set for 750° F. with a gas consumption of .62 therm per hour (56 cu. ft. 1100 B.t.u. gas) or 100 cu. ft. 525 B.t.u. gas.

The wire, after heating, is a uniform dark purple color and is passed directly into the plating tank after passing through a stream of air to remove any dust remaining on the wire. Not only does this system replace one or two caustic tanks, a water rinse tank, a muriatic acid, and another water rinse tank, but it eliminates the injurious fumes and avoids expensive maintenance.

■ ■

Refrigerator Sales Drive Planned for Midsummer

Servel, Inc., is sponsoring a nationwide midsummer drive for the sale of gas refrigerators during July and August. Awards will be made to top salesmen, according to an announcement from George S. Jones, Jr., vice-president and general sales manager.

The drive is to be known as the "Shirtsleeve" campaign with this slogan: "Roll up your shirtsleeves and roll up sales." The contestants will be aided by promotional material emphasizing the important selling points that can be made to prospects in the hot season.

Preview of coming campaigns by P·G·and E·

PACIFIC GAS AND ELECTRIC COMPANY

GAS APPLIANCE SOCIETY OF NORTHERN CALIFORNIA

1938 SUMMER HEATING CAMPAIGN

July
August

THIS MONTH the summer heating campaign gets under way in earnest. Newspaper advertising started last month will be continued and will be augmented by outdoor posterboards (305), bill-stickers (400,000) and truck banners on 900 company vehicles. Another feature will be window and floor displays in 56 of our principal offices. Finally, the company will share ⅓ of the dealer's newspaper space cost providing advertisements deal solely with gas heating equipment, feature the 10% discount and deferred billing plan, and mention reduced gas rates. If you haven't received our circular letter explaining this offer, see our office or any newspaper.

G 207-738

DEALERS: By watching this page from month to month you can keep informed of sales promotional campaigns to be sponsored by the Pacific Gas and Electric Company and the Gas Appliance Society. Detailed information will be supplied, as usual, through the mail. If such information is not received, call our local office or write Gas Appliance Society, 1355 Market Street, San Francisco, California.

Profitable DITCHING

With Barber-Greenes

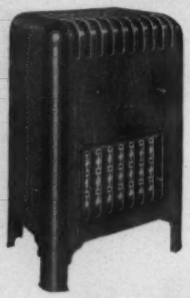
There are Four Barber-Greene Ditchers—

The Standard
The Pipeline Special
The Utility Special
The Service Special

You can have the many advantages of the exclusive B-G Vertical Boom in a machine designed for your peculiar needs. Ask for complete information, there is no obligation.

BARBER GREENE
715 West Park Ave.
Aurora, Ill.
36-17

NEW STREAMLINE MODEL



The heater that SMILES while it Warms

FRASER

Radiant Front Console

Notice the modern streamline design and the two-tone walnut finish. Made in five sizes from 20,000 to 60,000 B.T.U.'s. Also available with built-in fan.

MANUFACTURED BY
FRASER FURNACE CO.
STOCKTON, CALIFORNIA

DISTRIBUTED BY
H. R. BASFORD COMPANY
425 Second St., San Francisco
911 S. Grand Ave., Los Angeles

HEATS • VENTILATES • FILTERS • CIRCULATES • HUMIDIFIES

Race Gas FURNACES AIR CONDITIONERS

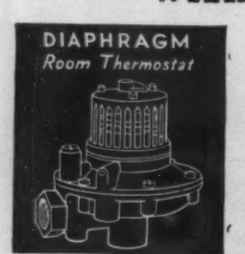
SIZES: 45,000 to 630,000 B.t.u. Input

Enter the air conditioning race with RACE. Increased customer good-will, minimum service requirements and profits the year round will make YOU —THE WINNER!

DISTRIBUTORS—DEALERS. Wire or Write for Territories, Discounts, Details.

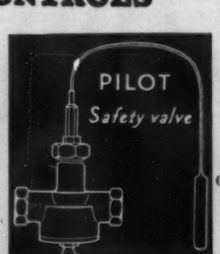
ROYAL AIR CONDITIONING EQUIPMENT CO.
1900 N. ALAMEDA BLVD. COMPTON, CALIFORNIA

BUILD YOUR HOUSEHEATING LOAD WITH KLIXON CONTROLS



These two advanced Klixon devices give exact automatic temperature control and assure positive pilot protection for your gas-fired space heaters . . . provide sales features that make it easy to sell gas heating.

Write today for descriptive bulletins.



SPENCER THERMOSTAT COMPANY
Unit of Metals & Controls Corporation
807 FOREST STREET • ATTLEBORO, MASSACHUSETTS

Optimism Keynotes P.C.G.A. Northwest Conference

(Continued from Page 25)

Gas & Coke Co., acted as chairman.

The maintenance of the liquid purification system equipment for sulphur recovery, as used by Pacific Gas and Electric Co. at its Marysville works was the subject discussed by J. F. Sauer, division superintendent for Pacific Gas and Electric in Marysville, Calif. This system, which purifies carburetted water gas made from western bituminous coal and California Diesel oil, was constructed for a normal operation of 60 to 100 M c.f. per hour. Since its construction the usual practice is 65 to 85 M c.f.

Industry's obligation to modern youth in the matter of employment was stressed by R. B. Ambrose of Portland, president of the Columbia Empire Industries.

Dealer-Utility Relations

Great strides have been made in dealer-utility relations, A. F. Rice, manager of market development for the Southern California Gas Co., told delegates, emphasizing that all a utility expects is an even break in the matter of display and other sales efforts.

The dealer's viewpoint of cooperative merchandising was presented by R. L. Levy, president, and J. King Bryon, managing director, of the Gas Appliance Society of Oregon. Both attested to the generally prevailing goodwill which exists today between dealer and utility.

Customer surveys and means of improving customer contacts were emphasized at one of the sessions, with George Mackenzie, Portland Gas & Coke Co., as chairman. Participating were George W. Smith, of Santa Barbara, district manager for the Southern Counties Gas Co.; H. W. Thomas of Northwest Cities Gas Co., Walla Walla, Washington; E. J. Ludeman of the Washington Gas & Electric Co., Tacoma; and R. E. Fisher, who had previously described plant for the Golden Gate International Exposition. (See Page 38).

"Home Service as the Newspapers See It," was the title of a paper presented by Ella Lehr of San Francisco, who is in charge of the Botsford, Constantine & Gardner test kitchen. (See Page 23).

Optimism for the future of the gas industry, as visioned by its leaders, was revealed by James F. Pollard, president of the Seattle Gas Co., in a closing talk entitled, "Crystal Gazing —The National Outlook."

Yankton Completes Natural Gas Changeover In June

THE city of Yankton, S. D., is being served by natural gas. The changeover, which was begun in February, was completed on June 8, a month ahead of schedule, when the Yankton Gas Co., now a subsidiary of the Sioux City Gas and Electric Co., opened the last of the eight sections of the city mains to natural gas. On that date the artificial gas plant ceased operation.

The first section of the city received natural gas, May 31, on the completion of the 24-mile pipe line construction, by the Northern Natural Gas Co., connecting the Yankton mains with the company's at Vermillion, S. D., which bring the gas from Texas fields.

A crew of 12 experienced changeover men made the adjustments necessary in gas equipment. A reducer house was built at the edge of the city to reduce the gas pressure for each of the eight sections as it was changed over. Pipe coating was done by Wailes Dove-Hermiston Corp. with a crew of 15 men.

■ ■

Chemical and Production Conference Held in N. Y.

The Joint Conference of the Production and Chemical Committees of the American Gas Association was held in New York, May 23, 24, and 25. Chairmen of the production and Chemical Committees, respectively, are C. R. Locke, assistant superintendent, Chicago By-Product Coke Co., and Prof. J. J. Morgan, Columbia University, New York.

Principal speakers were Alexander Forward, managing director, American Gas Association; A. M. Beebee, Rochester Gas & Electric Corp.; C. S. Goldsmith, and R. J. Sheridan, both of The Brooklyn Union Gas Co.; H. Vittinghoff, Stone & Webster Engineering Corp.; and Dr. J. R. Skeen, The United Gas Improvement Co.

Photographs of some of the delegates attending this joint meeting appear on page 31 of this issue.

■ ■

Payne Furnace Establishes New Sales Connections

Thomas F. Downs, Springfield, Mass., has been appointed factory representative for the Payne Furnace and Supply Co., Inc., Beverly Hills, Calif., in the following states: Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, New Jersey, and the eastern sections of New York and Pennsylvania. Mr. Downs was formerly associated with Spencer Thermostat Co.

The Sonner Sales Co., Chicago, Ill., will cover the middle west for the Payne Co. The Adams Sales Corp., Pittsburgh, Pa., will act as distributor for Western New York, Western Pennsylvania and West Virginia.

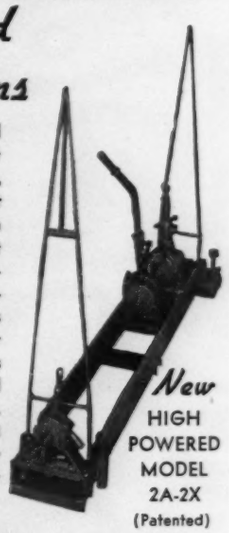
■ ■

Society Elects Officers

The American Section of the Society of Chemical Industry announces the election of the following officers for the year 1938-39: chairman, Wallace P. Cohoe, vice chairman, Lincoln T. Work, honorary secretary, Cyril S. Kimball, and honorary treasurer, J. W. H. Randall.

Eliminates Expensive
DITCHING AND TUNNELING
for Underground
Pipe Installations

The Hydrauger method of underground pipe installation reduces costs to but 1/10th that of cutting pavement, trenching, backfilling and repairing. It saves time and reduces costs on even the simplest jobs. It offers a low cost solution for many otherwise prohibitively expensive service extensions. Hydrauger's wide range of bore sizes (2½" to 14½") is sufficient to cover trunk and main oil, water, sewage, gas pipeline needs as well as the small service connections for gas or water. Hydrauger is fast—it has bored 38 feet of 4½" hole in 38 minutes. It bores through solid rock or any other formation encountered underground.



New HIGH POWERED MODEL 2A-2X (Patented)

HYDRAUGER CORP., Ltd.
116 New Montgomery Street
SAN FRANCISCO
Distributors in Principal Cities

Write for Bulletin No. 5

HYDRAUGER
"The Mechanical Gopher"

Homestead "Woodfires" and "Coalfires"

using gas as the fuel are the ideal fireplace heaters.

'Sweeten' your line and 'pep' up your salesmen with these Aristocrats of the Fireplace.

Your customers want them.

You can get them.

Current catalog and price list on request.

Homestead Heater Co.
Newark, N. J.

STANDARD PRODUCTS
THAT ARE
Kitson Standard

Made from finest Quality Metals, carefully machined to exacting specifications. Each thoroughly tested, before leaving the factory, for ease of operation and freedom from leakage.

G-501—Flathead Iron Body Brass Plug Gas Stop

KITSON COMPANY
2409-15 Westmoreland St. Philadelphia, Pa.

For The Small Industries

Sensitive regulation and positive lockup are assured by Reliance High Pressure "H" Regulators in small industrial installations. Available outlet pressures range from one-half pound to ten pounds, with proper pressure spring. Inlet pressure may be as high as 150 pounds, but when the inlet pressure exceeds 75 pounds, a primary reducing Regulator such as Reliance Type "H P C" is recommended to be used ahead of the type "H P H."

This Type "H P H" Regulator is similar to the Reliance Type "H" Regulator in construction, but has a reinforced toggle assembly with a double valve plunger link. The straight coil compression spring can be replaced by removing the top cover. Valve seats can be renewed or changed as to size by simply removing the end plug and using a hexagon wrench. The valve seat disc can be removed for cleaning the valve seat without taking the Regulator from the line.

This Regulator has the characteristic advantages of other Reliance types: compactness, accessibility of parts, positive performance, unexcelled design and construction and larger capacity than any other Regulator of the same size.

Send for Bulletin No. 47

REGULATORS YOU CAN RELY ON — RELIANCE — SINCE 1910 — TRADE MARK

Reliance Regulator Corporation

1000 Meridian Avenue, Alhambra, California

RELIANCE REGULATORS

One Company's Procedure in Maintaining and Operating Orifice Meter Set-ups

By M. J. CEREGHINO

Southern California Gas Company*

THE orifice meter after years of service has been and still remains the standard method of measuring large volumes of gases or liquids. The gas industry is interested chiefly in the orifice meter in the measurement of natural gas. While different types of positive displacement meters have been developed for measuring large volumes of gas, generally speaking, the orifice meter is still used even where the positive meter may be given consideration.

M. J. CEREGHINO

The orifice meter essentially is a very simple and yet positive type of meter. Consisting of three major parts, the meter tubes, orifice plate, and recording differential gage, it can readily be examined for performance and accuracy.

In installing an orifice meter set-up, the Southern California Gas Co. has adopted a standard method of procedure.

An orifice meter order sheet, Fig. 1, is used for the purpose of reporting the data used in the selection of the orifice meter runs.

In all new meter set-ups, the A.G.A. specifications are adhered to in their entirety. In selecting tubes for a new set-up, the pipes are carefully calibrated. The form provides a space for recording the internal diameter of the upstream and downstream tubes at one inch, at one-half diameter, and at one diameter. Readings are taken at four different points; W-W, X-X, Y-Y, and Z-Z. The averages of these are taken, the net results being the average diameter of the meter tube.

The orifice meter order sheet also provides a sketch of the meter tubes and fitting on which the exact dimensions of the various parts of the meter runs, connections, and fittings are recorded.

All new set-ups are connected up with flange taps for meter connections. Likewise, the use of the conventional companion flanges with an orifice disc inserted between them has been abandoned.

All new meter set-ups are provided with orifice fittings. Orifice fittings, either the semi- or regular type in which the orifice plate can be installed or removed without shutting off the gas in the meter run, or the "Junior," or semi-type, which require that the gas be shut off in the meter run before the orifice plate can be installed, are used exclusively on all meter set-ups on new installations.

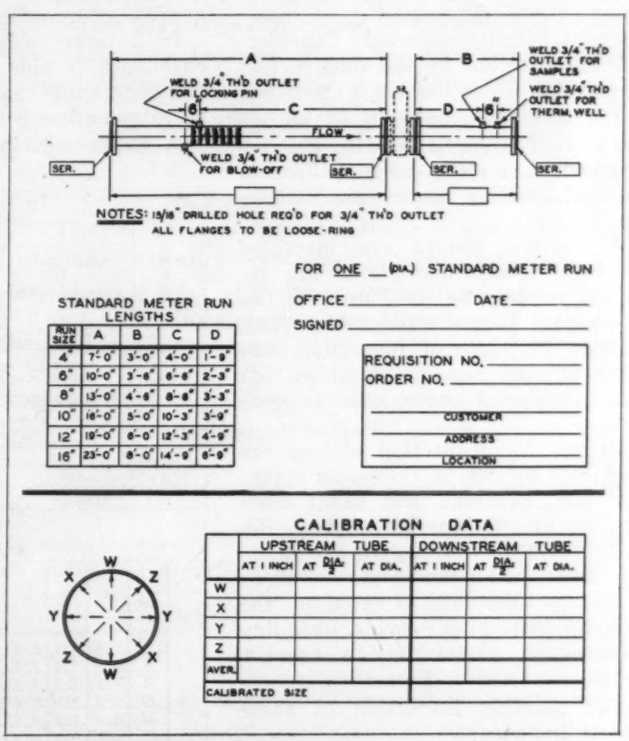
The length of the upstream and downstream tubes are made up so that the meter set-up can be used to cover all conditions mentioned in Table No. 20 of California Natural Gasoline Association Bulletin TS-353.

All orifice discs now in use consist of an orifice plate carrier, within which is inserted an insert or orifice plate.

With the increased use of various types of orifice fittings and different forms of orifice discs, the need for a standard orifice plate has become a necessity. The development of the insert which can be used on all types of orifice carriers has gone a long way towards simplifying the meterman's problems. A meterman can now carry a set of inserts or orifice plates of different sizes and he is sure that he can install this orifice plate in any meter set-up.

The time saved by the meterman more than pays for the initial cost necessitated in the standardization of orifice meter discs.

All inserts or orifice plates in use by the Southern California Gas Co. are made of KA 2 Stainless Steel. The carriers or plate holders are Cadmium plated. The added costs involved in the use of such plates more than pay for themselves over a period of time in that the meterman can be more certain that this plate is free



RUN SIZE	A	B	C	D
4"	7'-0"	3'-0"	4'-0"	1'-9"
6"	10'-0"	3'-6"	6'-6"	2'-3"
8"	13'-0"	4'-6"	8'-6"	3'-3"
10"	16'-0"	5'-0"	10'-3"	3'-9"
12"	19'-0"	6'-0"	12'-3"	4'-9"
16"	23'-0"	8'-0"	14'-9"	6'-9"

FIG. 1. Southern California Gas Company's orifice meter order sheet based on American Gas Association specifications.

* Presented before the Spring Technical conference, Pacific Coast Gas Association, Los Angeles, Calif., April 7-8, 1938 and also before the Southern California Meter Association, Huntington Park, Calif., May 26, 1938.

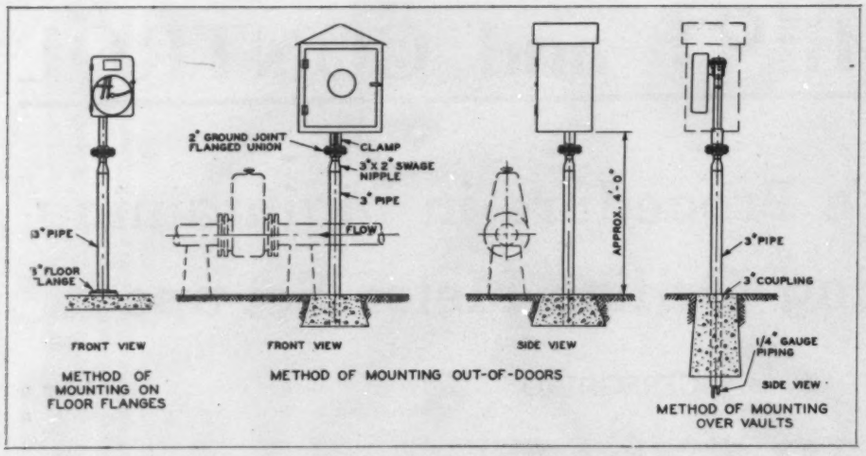


FIG. 2. Typical mountings for orifice meter gage and house.

from corrosion, and much less time is required for cleaning.

Two standard orifice meter installations have been designed. It is felt that for a majority of cases these two designs will cover all measurement requirements. Fig. 3 shows a typical single orifice meter installation with by-pass, while Fig. 4 illustrates a double orifice meter installation.

The drawings show the general design as to locations of valves and fittings. These set-ups are designed so that they may be used with Series 15 or Series 30 flanges.

The need for such standard set-ups has been in evidence for a number of years. With the use of such standards, the tendency to improve the accuracy and dependability of measurement is quite apparent. Considerable lost motion in the construction of new set-ups is likewise eliminated.

The specifications for these set-ups are in strict compliance with the recommendations as set-up in California Natural Gasoline Association Bulletin No. TS-353.

All orifice meters are inspected monthly. These inspections are reported monthly on the "Monthly Departmental Report" form No. 1232, giving: (1) date of inspection, (2) name of customer, (3) location, (4) size and type of meter, and (5) work done.

Orders for inspecting meters are made out by noting the name of the customer, locations, and meter number, on an "Orifice Meter Test Report" form. These orders are taken into the field by the inspector, all of the inspection data inserted at the time the inspection is made, including information pertaining to leaks, weeds, etc., under "Remarks."

The monthly inspection of these meters includes:

1. Soap for leaks around regulator stems, and around all connections which may be leaking.

2. Check differential pressure with water column at operating differential pressure, or, if there is no water column attached, check to zero.

3. Check static element with static test gage.

4. Check the chart that has correct statement of size of orifice disc.

5. Remove orifice plate and examine it for dirt and corrosion, and report whether the plate was found dirty or clean.

In a well organized meter department, the operating personnel should consist of the following groups: (1) chart collectors, (2) chart readers, (3) meter repairmen, and (4) specific gravity and coefficient inspector.

In a large organization, where a chart-man is able to occupy his full time changing charts, his duties can be more or less confined.

A chart collector should be more than an operator who merely goes around from one meter to another and picks up charts. Before a man is actually put out on chart collecting, he should be given a training in the meter shop in the operation of an orifice meter. He should be given a thorough training in the construction and mechanical operations of an orifice gage. Then, as he goes out into the field, he would be able to detect any inaccuracies in the operation of an orifice gage and be able to make minor repairs.

Briefly, a chart collector should be able to make the following minor repairs and take care of the following operating conditions:

1. Check differential gage to zero and against a water column (provided a water column is permanently installed) and adjust if necessary.

2. Check the arc of the differential pen arm and adjust if necessary.

3. Change clock in recording gage.

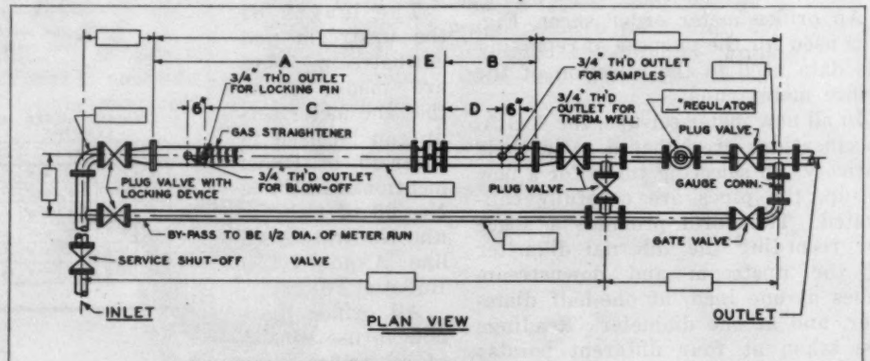
4. Clean pen points and change if necessary.

5. Check general appearance and operation of meter set-up and notify meter repairman of any irregularities in operation of the set-up.

Chart changing should not be considered as a minor factor in gas measurement. The chart changer is the man who daily contacts the various orifice meters and in general, the accuracy of operation of any group of meters depends to a large extent on having an alert and dependable chart collector on the job.

The actual changing of charts and the markings recorded thereon are a permanent record and as such

(Continued on Page 60)



STANDARD DIMENSIONS

RUN SIZE	A	B	C	D	E (FACE-TO-FACE) COMMERCIAL DANIEL OR ROBINSON ORIFICE FITTING STANDARD	ORIFICE FITTING EX. HEAVY	JR. OR SEMI FITTING STANDARD	JR. OR SEMI FITTING EX. HEAVY
4"	7'-0"	3'-0"	4'-0"	1'-9"	9 1/2"	12"	9 1/2"	12"
6"	10'-0"	3'-6"	6'-6"	2'-3"	10 1/2"	14"	10 1/2"	14"
8"	13'-0"	4'-6"	8'-6"	3'-3"	11 1/2"	14"	11 1/2"	14"
10"	16'-0"	5'-0"	10'-3"	3'-9"	13"	15 1/2"	13"	15 1/2"
12"	19'-0"	6'-0"	12'-3"	4'-9"	14"	17"	14"	17"
16"	23'-0"	6'-0"	14'-9"	6'-9"	18"	22 1/2"	18"	22 1/2"

FIG. 3. Typical single orifice meter installation with by-pass.

Harry A. Faull is Elected President of S.C.M.A.

HARRY A. Faull, orifice meter inspector, Southern Counties Gas Co., Los Angeles, was elected president of the Southern California Meter Association at the annual "Low-Jinks" held in Huntington Park, Calif., June 23. Mr. Faull, who served as vice-president during the past year, succeeds J. B. Taylor of the Signal Oil and Gas Co. George Forster, The Texas Co., was elected vice president; G. S. Duncan, General Petroleum Corp., was re-elected secretary; and Al Decker, Hall-Baker Co., was named treasurer.

H. A. FAULL

Elected to head the association's committee activities as members of the board of directors, were F. E. McAllister, Southern California Gas Co., programs; Gordon Greene, Robinson Orifice Fitting Co., entertainment; J. J. Delaney, Reliance Regulator Corp., membership; W. C. Cowan, Union Oil Co., standards; M. K. McIlvaine, Chancellor-Canfield-Midway Oil Co., by-laws; Arthur Rohman, *GAS*, publications. Retiring President Taylor will serve on the board of directors during the ensuing year.

The meeting was devoted entirely to entertainment climaxed by the showing of a five reel motion picture, "Man's Conquest of the Air," which was presented by Zeno Klinker, humorist and aviation enthusiast. Over 100 members attended the meeting.

■ ■

Rope Manufacturer Adopts Gas to Process Hemp Twine

The Mengden Rope Corp., Houston, Texas, one of the largest makers of hemp rope and twine, now employs a gas-fired air heater to dry hemp after the application of liquid dye and sizing. The usual practice has been to pass the twine over a revolving cylinder heated by steam.

The warm air is blown on to the revolving cylinder and the twine. When steam was used the time required was 20 minutes and steam cost 80 cents per hour. With gas the time cycle was cut to 12 minutes and the cost to five cents per hour.

■ ■

Bureau of Mines Reports On Novel Measuring Device

An accurate and precise device of value as a scientific aid in maintaining health and safety standards is described in detail in a report on the Bureau of Mines Haldane gas-analysis apparatus, just published by the Bureau of Mines, Department of the Interior.

The chief advantages of the Haldane apparatus are the accuracy and precision attainable in determining carbon dioxide, combustible gases, and oxygen, state L. B. Berger and H. H. Schrenk, authors of the report. Many types of gas mixtures may be analyzed with an accuracy and precision of 0.02 to 0.03 in percentage composition. In many instances this degree of accuracy is essential in determination of minor constituents. The design of the apparatus places certain limitations on the range of concentrations of gases that may be determined.

Copies of this report, Information Circular 7017, "Bureau of Mines Haldane Gas-Analysis Apparatus," may be obtained from the Bureau of Mines, Washington, D. C.

■ ■

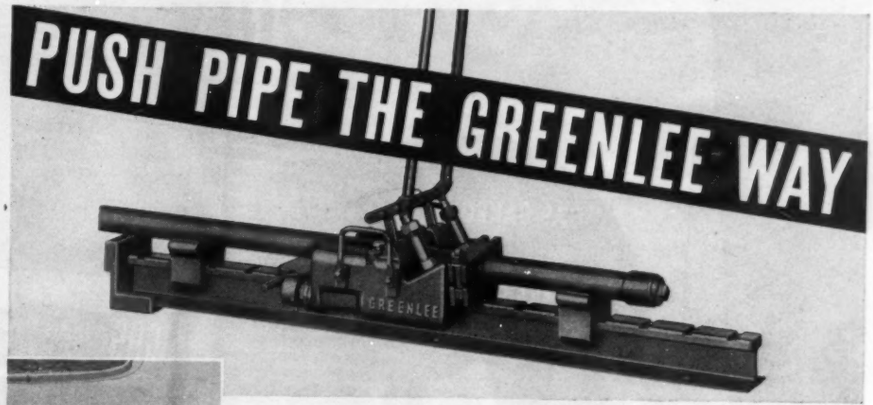
Cafe Range Folder Offered

Detroit-Michigan Stove Co., Detroit, has just published a folder on the company's new Garland Cafe ranges, according to word received from L. E. Clancy, advertising manager.

Ensign Carburetor Designs Filter for Gas Engines

The Ensign Carburetor Co., Ltd., Los Angeles, Calif., has designed the Ensign Natural Gas Filter for installation in the gas supply line of natural gas engine installations, to filter out foreign matter. This unit is an addition to the company's complete line of natural gas and butane carburetion equipment.

This filter is so constructed that it may be installed in a vertical or horizontal pipe line. The inlet and the outlet are plainly marked. The filtering element is easily removed for cleaning or replacement. The Ensign Natural Gas filter is manufactured in two sizes which can be installed in one- or two-in. pipe.



Above is the Greenlee Hydraulic Pusher set up for pushing pipe under a paved street. One man, standing in a comfortable position, can exert a pressure of 40,000 pounds on the pipe clamp.

Saves Time and Money

If you are using a pipe pusher that requires several men to operate it, you can save considerable time and money by putting a Greenlee Hydraulic Pusher in service. And if you are making underground installations by trenching, you can save still more. No longer is it necessary to tear up lawns and pavement or to do extensive trenching, back-filling, etc.

With the Greenlee, it is only necessary to make a trench long enough to accommodate the pusher with a section of pipe, and one man can send it where it is wanted, simply by pumping the handles. Eight speeds are provided for varying soil conditions, and a push of from 4 to 7 feet can be made, depending on the length of base used, without changing the pipe clamp.

Investigate this improved method of pushing pipe for gas or any other purpose. Complete information will be sent, gladly.

GREENLEE TOOL CO., 1700 Columbia Ave., ROCKFORD, ILL.

GREENLEE TOOL CO., 1700 Columbia Ave., Rockford, Ill.
Please send complete details on the Greenlee Hydraulic Pipe Pusher.

Company .....

Address .....

City ..... State.....

By..... G7-38

1938 P.C.G.A. COOPERATIVE ADVERTISING CALENDAR

P. C. G. A.
Norman R. McKee, President
Clifford Johnstone, Managing Dir.

JULY

COMMITTEE
A. C. Joy (Chairman), P. G. & E.
J. S. Spaulding, So. Calif. Gas Co.

GAS-BAKED
AND
EVERY ONE
Perfect
Thirty years in San Francisco is the record of H. Dragon Baking Co. Mr. Dragon (above) is justly proud of the high quality of his products, and gives much of the credit to clean, controllable gas fuel.
THE FULL-LINE production of this busy plant requires temperatures varying from 350 to 550 degrees. "With the automatic gas oven," says Mr. Dragon, "we quickly attain the exact heat desired, and hold it too. You can't beat gas for speed," he adds. "When starting up for baking, we can reach 500 degrees in less than an hour." • As for economy — "Both fuel and upkeep costs are low. After five years' use, our interior oven brickwork is like new." • Your Gas Company has interesting information on today's gas-fired equipment. Learn what gas can do for you!
GAS
THE MODERN FUEL
QUICK • CLEAN • CONTROLLABLE • DEPENDABLE • ECONOMICAL

GAS "COMES THROUGH" with flying colors
PACIFIC BRASS FOUNDRY of San Francisco has doubled its capacity with a new plant — the last word in modern facilities for precision production. • Before deciding on fuel, "Pacific" Engineers converted an old furnace to gas — compared operating costs and efficiency in exhaustive tests. Result: *The new plant is completely gas-equipped.* Consult your Gas Company's Industrial Engineers about *your* heat requirements.
GAS
THE MODERN FUEL
QUICK • CLEAN • CONTROLLABLE • DEPENDABLE • ECONOMICAL

INDUSTRIAL

★ Industrial applications of Gas are constantly publicized by the P. C. G. A., through actual installations and the testimony of prominent users. ★ The advertisements reproduced above appear, respectively, in "Western Baker" and "Western Machinery and Steel World." Both of these important trade journals, together with many others, have carried cooperative Gas Industry advertisements regularly for 10 consecutive years.

★

BUTANE-PROPANE NEWS

The Liquefied Petroleum Gas Industry Its Past—Present—and Future

By HAROLD W. WICKSTROM

Consulting Engineer

A STUDY of Table No. 1 clearly indicates that the liquefied gas industry is in a period of rapid growth. Just how far can this growth be expected to go and what are the significant facts behind these figures?

H. W. WICKSTROM

From 1922 to 1927 the growth was slow in volume but high in percentage. This period was the one that can be termed the try-out period of bottled gas when the wrinkles were being taken out of operations and handling. At the conclusion of this period the first active volume growth began.

From 1927 to 1931 the growth of the bottled gas business was at its first peak. Although the gallonage was not great, the customers-per-gallon were very high during this period. The reason for this is accounted for by the high price of the delivered fuel and the cautious use by the consumers.

1928 saw the advent of the central town plant and piped distribution service. Until 1932 this phase of the business appeared to have the edge with the bottled gas end marking time.

The general economic conditions were of little help to this new branch of the industry and as a consequence, with the tightening of capital, many plans for small town distribution systems were abandoned. The natural drop off in meters experienced by all ultilities is reflected in the drop in gallonage till 1936, when it again starts to rise due to both better conditions in the operating plants, plus the addition of new plants.

With normal business conditions it can be expected that the growth in this line will continue as there are still close to 3000 towns in the United States that are potential points of development.

While the town plant development was at a standstill the bottled gas held its own and increased slowly till 1933 when it again started to increase rapidly, showing remarkable gains in volume each year.

This large volume gain is due to two factors. The first is the introduction to the industry of the semi-bulk delivery system with a consequent lowering of fuel prices. This expansion was particularly true in the California area starting in 1934 when bulk stations were opened where the farmers could obtain fuel in 50 gal. or larger deliveries at motor fuel prices. At least a year was required to prove to the ultimate consumers that butane-propane mixtures were suitable fuels for domestic use. After one winter of operation with satisfaction the neighbors of the original users joined in the use and the rate of expansion of the industry was governed by the ability of the suppliers to cover the field. Typical instances of sales volumes were recorded in the San Joaquin Valley where salesmen made a sale a day with the average sale running $250.00 for equipment and appliances. The second reason for this increase was the gradual expansion of the use of the conventional bottled gas units to newer areas.

During this same period the extensive use of butane for engine fuel was developing in California. This use started with farm machinery such as tractors, pumps and trucks. In the Mid-Continent area new outlets were being sought through commercial use

TABLE NO. 1. MARKETED PRODUCTION OF LIQUEFIED PETROLEUM GAS

	Total Sales		Distribution—Gallons per Year					
Year	Gallons Per Year	Per Cent Increase over Previous Year	Bottled Gas	Per Cent Increase over Previous Year	Industrial and Miscellaneous	Per Cent Increase over Previous Year	Gas Manufacturing	Per Cent Increase over Previous Year
1922	222,641	....	Sale of liquefied petroleum gas confined primarily to bottled gas business prior to 1928					
1923	276,863	24.4						
1924	376,488	36.0						
1925	403,674	7.2						
1926	466,085	15.2						
1927	1,091,005	134.6						
1928	4,522,899	314.6	2,600,000	....	400,000	....	1,500,000	....
1929	9,930,964	119.6	5,900,000	126.9	1,500,000	275.0	2,500,000	66.7
1930	18,017,347	81.4	11,800,000	100.0	2,200,000	46.7	4,000,000	60.0
1931	28,769,576	59.7	15,294,648	29.6	7,171,686	226.0	6,303,242	57.6
1932	34,114,767	18.6	16,244,103	6.2	8,167,194	13.9	9,703,470	53.9
1933	38,931,008	14.1	16,625,588	2.4	13,987,095	71.3	8,318,325	–14.3
1934	56,427,000	44.9	17,681,000	6.4	32,448,000	132.0	6,298,000	–24.3
1935	76,855,000	36.2	21,380,000	20.9	47,894,000	47.6	7,581,000	20.4
1936	106,652,000	38.8	30,014,000	40.4	67,267,000	40.5	9,371,000	23.6
1937	141,505,000	33.0	40,823,000	36.0	89,402,000	33.0	11,280,000	20.0

as a gas fuel for plants that were not on the gas lines.

The California development was the proving-ground of the butane carburetor. Even with an undeveloped product and a complete lack of knowledge by the users of the methods of handling and utilization, the use of the fuel expanded faster than the mechanical development. As a consequence, with the advent of the large Diesel engines for trucks and a subsidy of 4c per gallon road tax in favor of the heavy fuel, many large truckers switched to Diesel. The farmer, however, stayed with butane, and as the mechanical equipment was improved and methods of installation became more fully understood, the total use continued to grow.

In 1934 experiments were made with bus operation. Due to the many advantages of the gas fuel, progress started in this field. A serious gasoline war was the major factor in the slowing down of this outlet.

There are, however, several large companies using butane as fuel for buses with entire satisfaction. The growth in this line will proceed only with sales work by men competent to handle the entire problem from fuel storage and handling to ultimate utilization. This is one of the largest and least developed fields.

Another large gallonage user in the western states has been the contracting industry. Due to the elimination of stealing losses and also due to better performance, butane has become popular with the large dirt movers for operating shovels, trucks and tractors. A large part of the California gallonage is going into this field. A more recent development has been the use as fuel for engine-driven oil well drilling outfits. This has expanded rapidly both in California and Texas.

Sales Volume

Review the table again and then take into consideration that most of this sales volume is the result of the efforts of a few oil companies and equipment manufacturers. The domestic sales represent the work of many people but most of these are directly interested in appliance sales as the primary part of their business and gas sales are incidental thereto.

Geographically the utilization of liquid gas on a large scale has started from the source of supply and radiated outwards. As a result the major development is found in the California and Texas areas with a gradual increase in the other Mid-Continent states and to a lesser degree on the Atlantic Coast.

A business map that indicates concentration of population will show that the present gallonage has been built up in the less densely populated areas.

A huge potential market for domestic use lies in the suburban parts of the more densely populated states. The possibilities of this type of expansion are clearly represented by the progress made in 15 months' time by Atlantic States Gas Co. as described in the June 1938 issue of *GAS*.

What, if anything, can slow down the development of this industry? Nothing can stop the progress at the rate at which it is proceeding, but there are several factors that will hold the expansion in check.

The first and most important of these is the fact that the industry is a specialty line of a major industry. The oil business is such that the present volumes of liquefied gases handled, though large when observed from the outside, are inconsequential as compared to the total volume of business in motor fuel and fuel oil.

As a result, the average oil company, with a few exceptions, has no particular interest in this development and most of the ones that are participating do so in a restrained way, fearful through lack of knowledge of the situation, that they might be fostering a product that will replace gasoline sales.

The second is the lack of knowledge of handling the product and the imposition of unintelligent though sincere regulations for its handling.

There is a lack of individual man power and the finances necessary to intelligently inform prospective members of the industry and the governmental officials directly concerned of the past work done and the solutions of many of the problems that on the surface appear to be paramount.

Impractical regulations are nearly as bad as none, as the respect and sagacity of the regulatory groups are questioned when it is found that the practical and safe operation is seriously hampered by rules and regulations arbitrarily imposed.

The third factor is the lack of ability of the present operators to finance expansion with assurance of a profit. The very nature of the business calls for educational and pioneering work that takes most of the profit out of the immediate sale to build up the business for the future. Many of the retail operators in this industry are of modest financial means and can only expand with the money received through profits. This business can be likened to the public utility where the capital must be invested before the load can be obtained.

From experience in the past on producer antipathy, time required to educate new members of the industry and the ability to finance indicates a growth in the next few years at a rate evidenced in the past two. There are no fundamental reasons for a stop in the growth, and the market is so far from a saturation point that this factor does not enter in at this time.

Supply Is Great

Sources of supply are so greatly in excess of the present demand—no trouble should be looked for there. Until the sales reach over 1½ million gals. per day the present installed plants with the addition of storage and fractionating equipment can supply the demand. When the load increases beyond this point there is still available another 10 million gals. per day of liquefied gases that could be recovered by more complete processing. Assuming a continual growth at the rate of 30 per cent per year, a total gallonage of 184,000,000 gals. in 1938 and 220,000,000 gals. in 1939 is indicated.

From this analogy the domestic field should increase 13,000,000 gals. in 1938 and 18,000,000 in 1939.

The average domestic user at fair prices will consume 250 gals. per year. This means an increase of 52,000 users in 1938 and 72,000 in 1939.

From past experience this indicates at least a $5,000,000 market in 1938 and a $7,000,000 market in 1939 for appliances alone. In addition equipment sales should reach at least 50 per cent of the above figures.

Is the industry ready for such expansion or can it make itself ready? Appliances, valves, regulators and tanks are available on demand. Utilization equipment can be obtained readily. The bottle neck to expansion will be in transportation facilities, bulk storage at the producers' plants, and distribution storage and transportation facilities, or the financial ability of the present operators to take care of the expansion.

Plans are under consideration for a number of central plants most of which are held up due to the inability to finance. Some of these will materialize during the next two years.

Expansion in the industrial field is dependent upon the sales effort put forth. The tendency will be to favor the expansion into the outlets resulting in the highest return such as standby plants, railway air conditioning and other fields to which the gas is particularly adapted due to process or utilization rather than on

competition basis with other fuels.

Expansion in the automotive field will follow the bulk distribution plant installations. This type of load is desirable for the small operator in order to increase his total through-put volume which improves his buying power from the suppliers.

The present distribution for highway use is approximately 15,000,000 gallons a year in California, the only place there was any extensive use in 1937.

A casual survey of the potentialities in this line indicates several geographical locations where amounts of this quantity could be easily dispensed with no upset in the present marketing arrangements of motor fuel.

The last release from the Department of Interior shows a trend to the greater use of propane and its mixtures than the straight butane.

It is logical that this should be true as butane has a higher value in the form of casinghead gasoline and it is also a valuable component as a charging stock for the polymerization processes.

This is a factor in the design of new bulk storage facilities and consideration should be given to possible future operating pressures.

A study of the past gains in the industry and an analysis of the reasons for the gains leads to the conclusion that the liquefied gas industry is still in its beginning stage and the future offers possibilities for greatly increased volumes, both for the fuel supply end of the business and the equipment industries allied to it. There is also a fruitful field ahead for expansion on the public utility basis with operators centering around central plants with the outlying districts supplied by distributor owned tank and meter setups.

■ ■

N.F.P.A. Committee on Gases Makes Recommendations

The committee on gases of the National Fire Protection Association met June 16 at the Seaview Golf Club, Absecon, N. J., coincident with the summer meeting of the Compressed Gas Manufacturers' Association, to further consider the annual report on liquefied petroleum gas submitted to the National Fire Protection Association at its annual convention in Atlantic City in May.

Definite recommendations for revision of the rules for the installation and use of liquefied petroleum gases were made.

■ ■

C. I. Langdon Succumbs

C. I. Langdon, of Lone Star Gas System advertising department, Dallas, Texas, died, May 14, in a Dallas hospital. Death was caused by pneumonia.

PERFORMANCE WINS 2 to 1 PREFERENCE FOR HACKNEY CYLINDERS

Whenever an industry demonstrates a marked preference for any product there must be a good reason. The two-to-one preference for Hackney cylinders used in the storage and transportation of Butane and Propane is no exception. It is based on years of satisfactory experience and the absolute dependability of Pressed Steel Tank Company products.

The complete understanding of the characteristics of gases, liquids and solids—combined with ample equipment and the intimate knowledge of metals—has produced a complete line of Hackney containers best fitted for each requirement.

In every detail of construction, Hackney cylinders are built for economy and service. Uniform strength, capacity and weight assure your complete satisfaction. Write today for detailed information about Hackney cylinders for Propane, Butane and Butane-Propane mixtures — there is no obligation.

Hackney MILWAUKEE

PRESSED STEEL TANK COMPANY

208 S. La Salle St., Rm. 1185, Chicago
666 Roosevelt Building, Los Angeles
1363 Vanderbilt Concourse, New York
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Containers for Gases, Liquids and Solids

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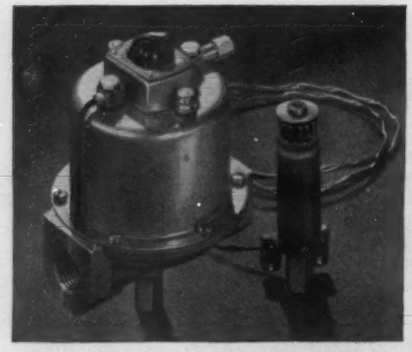
THERMO ELECTRIC SAFETY CONTROL FOR GAS BURNING APPLIANCES

BOILERS ★ FURNACES ★ CONV. BURNERS ★ SPACE HEATERS ★ UNIT HEATERS ★ AIR CONDITIONERS OVENS ★ RANGES ★ WATER HEATERS, ETC.

GAS VALVE SERIES 500

MILWAUKEE GAS SPECIALTY CO.
MILWAUKEE ★ WISCONSIN

ELECTRIC SWITCH SERIES 600



General Controls Co. Offers Gas Space Heater Control

A new automatic gas-actuated space heater control has been announced by the General Controls Co. For the control of circulating heaters, range heaters, gas radiators, floor furnaces, etc. The unit is self-contained except for the pilot burner.

No outside source of current is needed, a small pilot burner generator supplying the current for operation. This accomplishes a threefold purpose, according to the manufacturers: (1) checks the pilot flame, providing automatic pilot control; (2) provides current for valve operation; (3) permits the use of an integral electric type thermostat with ½° total differential.

The thermocouple principle is utilized as an automatic valve operator through the use of a sensitive yet rugged pilot valve. The main valve is a gas-actuated diaphragm type. The pilot valve has a three way action and a new development prevents any bleed gas except for about one second during the opening cycle, say the makers. There is no noise when starting, stopping or operating. Valve is either on or off and does not throttle.

A bulletin on this new control may be had by writing the General Controls Co., 700 West Ivy Street, Glendale, Calif.

■ ■

Liquefied Petroleum Gas Codes Adopted by States

The State of Kansas, according to a recent announcement by J. T. Kirchner, director, Department of Inspections and Registrations, is proposing to adopt rules and regulations for the design, installation and construction of containers for the storage and handling of liquefied petroleum gas. The proposed rules follow closely the recommendations of the National Board of Fire Underwriters.

In Louisiana, the legislation on liquefied petroleum gas (Senate Bill No. 230) passed the third reading in the Senate on June 8.

■ ■

Gas Boiler Does Double Duty

An automatic gas-fired boiler kills two birds with one stone for the new laundry which Ross Walker has opened in Portland, Ore. Steam heats the water right in the tubs and also heats a room in which the clothes are quickly dried. This installation was made with the cooperation of the Portland Gas & Coke Co. of Oregon.

Cheyenne Gas Co. Announces Plans for Changeover

The Cheyenne Gas Co., which has served Cheyenne, Okla., with butane gas since October, 1935, expects to install a natural gas distribution plant by October 1, 1938, approximately, according to M. Jane Brickell, secretary-treasurer of the company.

The new system will cost about $10,000. The company is constructing a natural gas transmission line 12 mi. long to tap the main line of the Consolidated Gas Utilities Corp., from the Texas field. Four miles will also be added to the company's gas distribution system in Cheyenne. The company now has about 200 consumers in Cheyenne with a slight increase expected for fall.

■ ■

Butane Gas Lighting for Scottish Railway Station

According to the Weekly Scotsman, the London and Northeastern Railway has arranged to install a system of "Bottled gas lighting" at Ratho station and yard, on the main line between Edinburgh and Glasgow. Ratho is at present lighted with oil lamps and will be the first station in Scotland to be illuminated by liquefied petroleum gas.

The gas to be used is butane, with small quantities of other hydrocarbon gases, such as propane. Each lamp will be self-contained and fed by its own miniature gasometer. If the installation at Ratho proves satisfactory, the railroad plans to extend the system to other L.N.E.R. stations.

■ ■

Butane Gas Plant to Be Installed in Sabinal

City officials of Sabinal, Texas, recently let a contract for the installation of a municipal butane gas plant. Work on the new installation was to have begun in June.

Preliminary action for the erection of a plant took place in September, 1937, when V. Clouse, of Rody and Clouse, Kerrville and Fort Worth engineers, prepared at the request of the city council plans and specifications for the municipal plant. The new plant will be financed by the recent sale of revenue bonds amounting to $35,000.

■ ■

Ottawa is Chosen for Canadian Meeting

The Canadian section of the Compressed Gas Manufacturers' Association will hold its regular autumn meeting in Ottawa, September 9-10. This section is recognized throughout the Dominion as the authoritative group on the installation, distribution and use of liquefied petroleum gas in Canada.

■ ■

L.P.G.A. Plans Fall Section Meetings

The Liquefied Petroleum Gas Association announces that the midwest section is planning to hold its fall meeting at the Bismarck Hotel, Chicago. Tentative meeting dates are September 22-23.

The southern section will hold its fall meeting at Little Rock, Arkansas. The date has not yet been announced.

ENSIGN FILTER

for natural gas engines

Filters out all foreign matter in gas supply lines

Here is an important addition to the complete line of ENSIGN Natural Gas and Butane carburetion equipment. ● Installed in the gas supply line, this newest ENSIGN development filters out all injurious foreign matter which might be present to cause trouble. Made in two sizes for installation in 1" and 2" vertical or horizontal pipe lines, the ENSIGN Natural Gas Filter is extremely simple, and the element is easily removed for cleaning or replacement. Full particulars on request.

ENSIGN CARBURETOR CO., LTD.
LOS ANGELES · DALLAS · CHICAGO

Natural Gas Sales for Generation of Electricity Increase in March

A.G.A. statistics released by Paul Ryan, chief statistician for the American Gas Association, show an increase of 9.3 per cent in natural gas sales for the generation of electricity for March, 1938, over March of last year. Total natural gas customers increased 2.8 per cent during March as compared to a 1.8 per cent increase in the manufactured gas field.

Figures for gas company operations on the Pacific Coast show a decrease in industrial volume for California and Arizona during the first quarter of 1938, but both states have substantial increases in domestic sales. Washington showed a 6.8 increase in gross revenue for the period. Total customers for the Pacific Coast area increased 3.3 per cent during the first three months of 1938 as compared with the first quarter of 1937.

Pacific Coast gas companies had a combined income of $8,357,458 from April gas sales, a 2.2 per cent increase over April 1937. During April, California showed 16.5 per cent increase in consumption by commercial houses but a 9.4 per cent decrease by industrial plants.

Natural gas sales in New York revealed an increase of 7.7 per cent for the first three-months period as compared to the first quarter of 1937. Total revenue for this period in New York was $5,812,256 as compared to $5,398,421 for 1937.

■ ■

Bureau of Mines Compiles New Data On Embrittlement of Boiler Steel

New knowledge regarding the cause of embrittlement of boiler steel, has been obtained from a study of intercrystalline cracking in such steel, conducted by the Bureau of Mines, United States Department of the Interior. The results of the investigation are summarized in a paper by W. C. Schroder, A. A. Berk and C. H. Fellows.

The laboratory results show that cracking starts from selective corrosion of stressed grain boundaries usually by sodium hydroxide-sodium silicate solutions. It proceeds through the metal both by selective corrosion and bursting forces exerted on the grain boundaries by the corrosion products that occupy a greater value than the initial intergranular material.

Sodium sulfate did not exert a major protective action in the laboratory teses. This conclusion is supported by two cases of cracking recently discovered in operating boilers.

The laboratory experiments show that lignin and some other organic materials offer more protection that sodium sulfate. They can be used at pressure up to 550 lbs. The lignin compounds are now being tested in operating boilers.

■ ■

Lee Holtz and Wm. Pipkin, California Executives, Gain in Illnesses

Lee Holtz, superintendent of distribution, Southern California Gas Co., is reported greatly improved after an emergency operation performed June 10 following a sudden attack of appendicitis. According to word received as GAS goes to press, he will be moved from the French Hospital to his home in Los Angeles within a few days. It is not expected that he will be able to return to his office for some weeks.

On the sick list also but progressing nicely according to latest reports, is William Pipkin, superintendent of Southern Fuel Co.

■ ■

Gas Meters in Ada, Okla., Show Increase

Gas meters in service in Ada, Okla., show an increase during the last 10 years from 2900 to 3800. This growth has necessitated the extension of transmission lines and acquisition of additional facilities for handling and cleaning gas. The community of Ada is served by the Southwest Natural Gas Co. Company lines now reach into Seminole, Allen, Holdenville, Sasakwa, Wetumka, and Fitts Gas areas.

■ ■

Mitchell Has Ozona Managership

Arthur Mitchell, formerly manager of the Cross Plains office for the West Texas Utilities Co., has recently been transferred to Ozona, Texas, where he will succeed J. O. Lusby as local manager for the company. Mr. Lusby will now assume the managership of the company's Big Lake, Texas, office.

RESULTS

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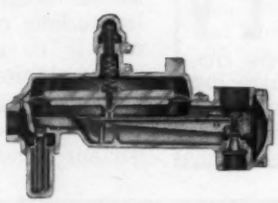
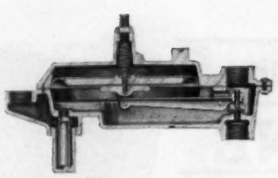
REYNOLDS has more than forty-five years of experience in the Gas Control Field, working out, designing, building, testing Gas Regulators and the result—Hundreds of thousands of Regulators in use throughout the world, meeting requirements and giving successful performance.

The Service Regulators featured are built to meet the specific requirements in service regulation. They are guaranteed to give the high quality of performance you demand, over years of operation, with a minimum upkeep. Below are a few characteristics of the different models.



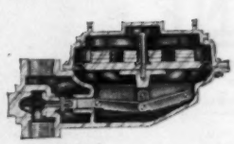
MODEL 10 — Dead Weight or Spring Type, with or without Mercury Seal. All working parts are so accessible as to be interchangeable without removal from pipe line. (Straight Lever Type.)

☆



MODEL 20 — Dead Weight or Spring Type, with or without Mercury Seal. All working parts are so accurate as to permit complete interchangeability in shop. (Straight Lever Type.)

☆



MODEL 30—For horizontal or vertical connection with removable valve pocket. Available with either Spring or Dead Weight adjustment. With or without Mercury Seal. (Toggle Lever Type.)

Any of the Models 10, 20, or 30 can be furnished with Dead Weight or combination Spring and Dead Weight Safety Seal if Mercury Seal is not desired.

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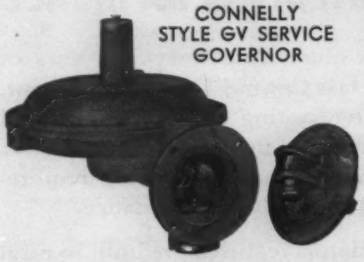

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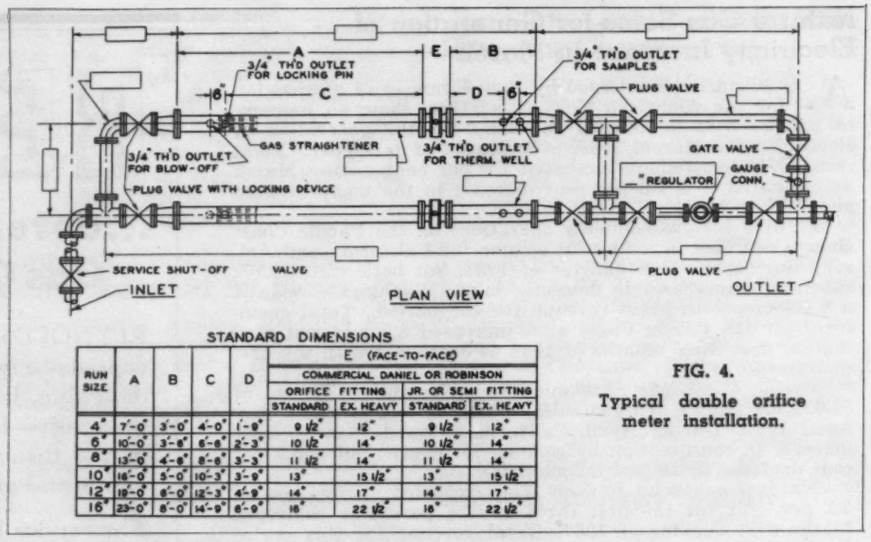

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RUN SIZE	A	B	C	D	E (FACE-TO-FACE) COMMERCIAL DANIEL OR ROBINSON ORIFICE FITTING STANDARD	ORIFICE FITTING EX. HEAVY	JR. OR SEMI FITTING STANDARD	JR. OR SEMI FITTING EX. HEAVY
4"	7'-0"	3'-0"	4'-0"	1'-8"	9 1/2"	12"	9 1/2"	12"
6"	10'-0"	3'-8"	6'-8"	2'-3"	10 1/2"	14"	10 1/2"	14"
8"	13'-0"	4'-8"	8'-8"	3'-3"	11 1/2"	14"	11 1/2"	14"
10"	16'-0"	5'-0"	10'-3"	3'-9"	13"	15 1/2"	13"	15 1/2"
12"	19'-0"	6'-0"	12'-3"	4'-9"	14"	17"	14"	17"
16"	23'-0"	8'-0"	14'-9"	6'-9"	16"	22 1/2"	16"	22 1/2"

FIG. 4.
Typical double orifice meter installation.

Maintaining Orifice Meter Set-ups

(Continued from Page 52)

should be given consideration. For, in the long run, an orifice meter volume is no more accurate than the record obtained from the chart.

Chart readers, if they perform their duties as required, play an important part in measurement work.

Chart reading requires a type of man who is able to concentrate on his work. The work involves considerable eye strain. The number of charts that an operator is able to read depends largely on the nature of the flow and the degree of accuracy required by the particular type of volume in question.

The chart reader can be of considerable help to the meterman by pointing out to him any irregularities in the charts, as he is in close contact with the daily volumes of gas passing though each meter

The meterman is responsible for the proper operation of the orifice meter set-up. Briefly, his duties are:

1. To maintain orifice meter gage in calibration.

2. To check orifice meter set-up in order to detect any leaks in piping.

3. To use proper size orifice plate in set-up in order that differential reading will be satisfactory; also, inspect orifice plate for calibration and dirt.

4. To check and maintain miscellaneous equipment such as recording thermometers, pressure gages, etc., used with meter setups.

The meterman can secure considerable help from both the chart collector and chart reader in trouble shooting.

A good meterman under favorable circumstances can maintain about 50 orifice meter set-ups. This is based on the assumption that the meters are scattered over a considerable area and that regular routine inspections are adhered to.

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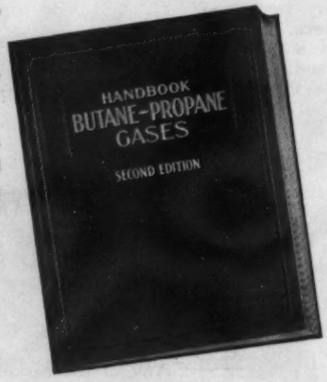

CONTENTS: Use in internal combustion engines: Design & Installation of Storage: Supply from Petroleum Refineries: Engineering Data on the Lower Olefins: Domestic Appliance Testing and Utilization: Economical Comparisons with Coal, Oil, Electricity, Producer Gas, Manufactured Gas: Town Plants: Manufacture from Natural Gas: Special Uses: Volume Correction Factors: Supplements & Revisions: Transportation: Use with other Gases: Analysis & Testing: Properties of Mixtures: Bottled Gas Distribution: Bibliography: Central Plant Directory: Catalogue Section.

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The orifice meter gage, naturally, is one of the meterman's chief sources of trouble. A meterman who is experienced in his line of work can be satisfied that his gage is properly connected if he calibrates his gage at intervals of six months. This is assuming that the gas is dry and free of moisture and dirt.

During this interval, if he checks his gage to zero weekly and watches the operation of the pen arm and examines the stuffing box, he can be reasonably sure that the gage is operating satisfactorily.

Routine Outlined

Briefly stated, the following routine procedure should be followed by a meterman in order to properly maintain his orifice meter set-ups:

1. Calibrate orifice meter gage against a water column every six months.
2. Check differential pressure and static pressure weekly.
3. Inspect orifice plate monthly.
4. Check miscellaneous equipment such as recording thermometers, pressure gages, etc., monthly.
5. Check gage piping for leaks monthly.

The specific gravity and coefficient inspector rounds out the operating crew in an orifice meter department.

The duties of this man are to obtain as nearly as possible, accurate records of the temperature and gravity of the gas as measured in the various meter set-ups under his supervision.

The temperature at which gas is metered should be determined with a fair degree of accuracy, as 10 degrees difference in temperature produces an error of one per cent in the volume measured.

All large metering stations, where gas is handled in large quantities, should be provided with a recording thermometer, which renders a continuous record of the temperature as metered. Suitable provisions should be made for checking this thermometer with a calibrated mercury thermometer.

The specific gravity of the gas measured is likewise an important factor and under ordinary conditions of measuring, a change of 12 points in the specific gravity produces approximately one per cent in the volume of gas recorded.

The inspector should make every effort to secure as accurate a record of the specific gravity as possible.

On large pipe lines where the gas is metered in a central terminal station, this problem can be easily solved by the installation of a recording gravitometer, which records a continuous record of the specific gravity of gas as measured.

The lack of any uniform standard as to the methods to be used in calculating coefficients has been quite apparent among gas men for a number of years. The chief difficulty seems to be in the number of variable factors involved in the calculation of a gas coefficient. The introduction of the new coefficients and added factors involved, as set forth in the latest investigation as published in the final report of the Measurement Committee of the American Gas Association, has likewise tendered to further aggravate the complexity of calculating orifice meter coefficients.

Calculation of Coefficient

After considerable investigation with the use of the latest coefficient data, the following companies: Industrial Fuel Supply Co., Southern Fuel Co., Southern Counties Gas Co., and the Southern California Gas Co., have worked out a definite program for the calculation of coefficients which has gone a long way toward standardiza-

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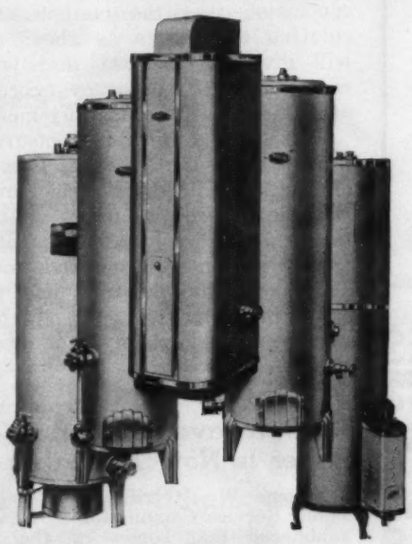

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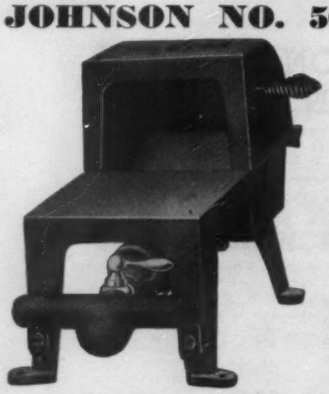

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tion. This method is outlined as follows:

1. Coefficient changes are made on a monthly basis.
2. The data on specific gravity, temperature, and static pressure for the previous month is used for the current month.
3. A revised coefficient is set-up for each meter which consists of:

$$(C \times M \times F_{e2} \times Fr \times F_{pv})$$

This revised coefficient is then multiplied by the specific gravity and temperature factor and the corrected gas coefficient is easily calculated.

4. The M factor, when square root charts are used, is multiplied by the standard coefficient, C, and of course, is only changed when the static element or differential range of the meter is changed.
5. The expansion factor, F_{e2}, is set up and changed only with a plate change.
6. The Reynolds' number factor, F_R is set up and changed only with a plate change.
7. The Super-Expansibility factor, F_{pv}, is set up and under normal conditions is changed only with a plate change. However, where the static pressure is apt to fluctuate violently, this factor is not included in the revised coefficient.
8. The revised coefficient, which is set up, is used in nearly all cases until a change in plate or meter change occurs.

The only factors that are necessary to be used in the monthly coefficient changes, then, are the F_g and F_T factors. (Revised Coefficient) $(F_g \times F_T)$ = Corrected Gas Coefficient.

Results of several years' experience with the use of the new coefficients and factors recommended by the American Gas Association Report on Gas Measurement has led us to the conclusion that the method of calculating coefficients as above stated will give a coefficient that will be well within the accuracy expectancy of commercial gas measurement.

The work of the Gas Measurement Committee of the American Gas Association in establishing coefficients and suitable correction factors which are involved in gas mesaurement, together with its recommendations on standard meter set-ups, has placed orifice meter measurement on a higher and more stable plane in the measurement field.

■ ■

E. R. Weaver's Odorization Paper Is Now Available

Eugene W. Merrill, chief engineer, Public Service Commission of Utah, has announced that copies of the paper, "Odorization of Natural Gas," recently presented by E. R. Weaver before Utah Utility Commission Engineers, have been made available by National Bureau of Standards. Mr. Weaver, chemist at the Bureau, has included in his paper discussions of the development of suitable odorants, detection of underground leaks, introduction of odorants into gas, etc.

Bryant Fires Opening Gun in 1938-39 Heating Program

Preceded by a special delivery letter enclosing the new "Join The Swing To Heating With Gas" lapel button, the Bryant Cleveland Heater Co., delivered, June 1, their 1938-39 sales promotional portfolio by Western Union messengers to gas sales executives throughout the country.

The Bryant portfolio, outlining an intensive heating sales campaign, includes a detailed plan of action; suggested billboard, bill insert and newspaper advertising layouts and copy; publicity releases to local papers; direct-by-mail folders and hand-out material; prospect cards, doorknob hangers and telephone canvass lists; tested sales plans and contests; co-ordinated sales tie-ups with dealers and heating contractors; and miscellaneous sales aids. The portfolio is bound in a special cover and the sections of its contents are segregated in labelled pockets.

■ ■

A.G.A. Plans to Publish Corrosion Manual

Alexander Forward, managing director, American Gas Association, has recently announced that the Corrosion Manual, entitled: "Soil Corrosion and Pipe Line Protection," by Dr. Scott Ewing, A.G.A. research associate, is now ready for the press.

The new publication is a manual for distribution engineers and pipe line operators. General subjects covered in the manual include: pipe line systems in the United States, soil classification as related to pipe line corrosion, corrosion survey methods, methods of applying coatings, cathodic protection and electrolysis, etc.

Major Forward has urged that copies of the manual be ordered in advance in order that the Committee on Pipe Coatings and Corrosion may obtain sufficient appropriation to print the required number of manuals.

■ ■

Koppers Co. To Build Holder For Sinclair Refinery Co.

Koppers Co.'s Western Gas Division, Fort Wayne, Ind., has been awarded two construction contracts by the Sinclair Refining Co., New York, N. Y., for their East Chicago, Ind., refinery.

The contracts are for a riveted and weld-caulked, water sealed gas holder with a capacity of 750,000 cu. ft., a sweating tank, three open-top rundown tanks, and two hot water tanks. The tanks are to be of all welded steel.

The gas holder will be completed in October and the tanks in August.

■ ■

U. S. Pipe and Foundry Co. Publishes New Catalogue

The United States Pipe and Foundry Co., Burlington, N. J., has recently published a new catalogue entitled "U. S. Joint Pipe and Fittings." The publication is illustrated and includes detailed specifications and tables for the U. S. type of "mechanical joint" pipe and fittings. The catalogue also lists the standard specifications for the company's cast iron pipe.

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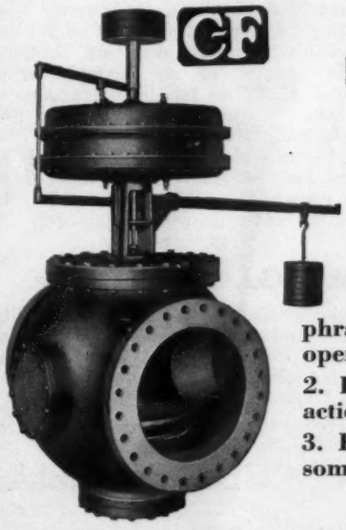

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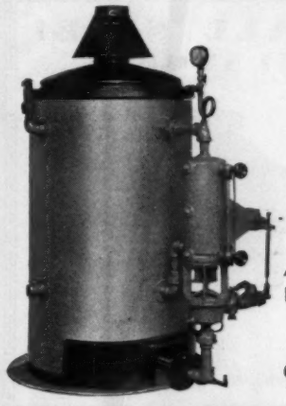

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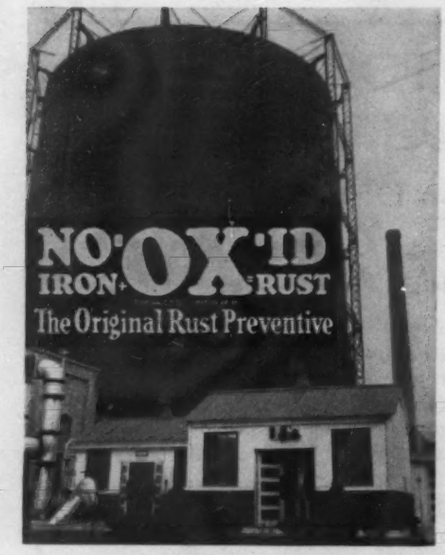


Wise Heads Koppers Co. Western Gas Division

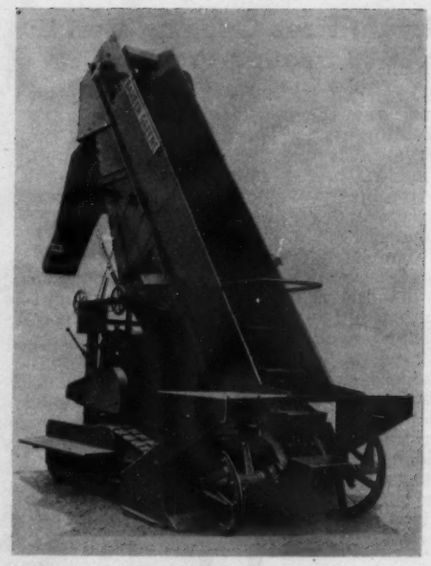
Frank F. Wise has been appointed general manager of Koppers Co.'s Western Gas Division in Fort Wayne, Ind., according to an announcement by Walter F. Perkins, vice-president of Koppers Co., in charge of its manufacturing divisions. Mr. Wise has been transferred from the company's Engineering and Construction Division, Pittsburgh.

Mr. Perkins also announced that R. A. Wickes has become sales manager of the Western Gas Division, and A. G. Hall will remain as works manager.

■ ■

Geist, U.G.I. Director, Dies

Clarence Henry Geist, public utility operator and financier, died June 12, at Villanova, Pa. Mr. Geist was president of C. H. Geist Co., Inc., and a director of the United Gas Improvement Co.



Barber-Greene Announces Junior Bucket Loader

A new full crawler-mounted, high capacity, self-feeding bucket loader, Model 552, has been announced by Barber-Greene Co., Aurora, Ill., manufacturers of material-handling machines.

The bucket loader operates continuously; its spirals are self-feeding. Operation is simple and easily learned. The bucket loader, being full crawler-mounted is quickly moved from one set-up to another within the yard or pit, and its boom may be laid back for low traveling clearance for covering greater distances.

The loader has a tank type chassis frame, synchronized spiral feed, automatic overload release. Optional high traveling speed or slow crowding speed. The model incorporates the B-G Patented Floating Boom principle.

■ ■

Gas Annealer Installed by Chicago Wire Manufacturer

Peoples Gas Light and Coke Co., Chicago, recently cooperated in the installation of a new type of annealing gas furnace at the plant of the Wilson Steel & Wire Co., Chicago. The wire, in charges varying from 8000 to 14,000 lbs. in weight, is placed on four spindles on a base. An inner cover is placed over the wire, and the annealing bell, with the gas burners, is placed over all by crane. When up to heat, the outer cover is removed and transferred to another base. A non-oxidizing atmosphere is preserved about the wire, while cooling by the inner cover.

■ ■

New Potato Peeling Process Is Provided By Gas Heat

A two step process for peeling potatoes is now in operation at the Sanitary Food Processing Co., Seattle, Wash. The spuds are carried by a conveyor through a tunnel where they are exposed to a hot blast from 40 gas burners which blisters the skins. In the second step 15 nozzles spray cold water at 150 lbs. pressure on to the potatoes and wash them clean of both skins and dirt. This installation was made with the cooperation of the Seattle Gas Co.

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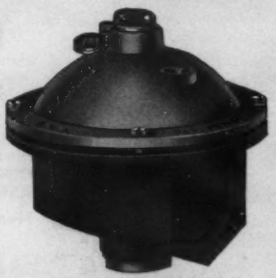

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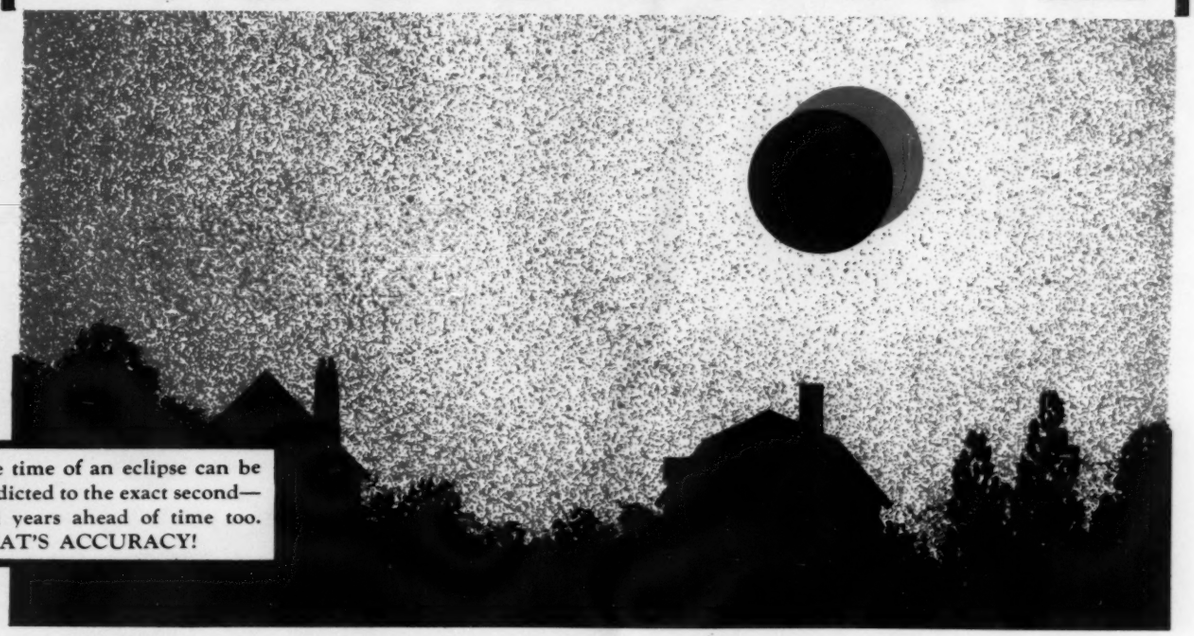
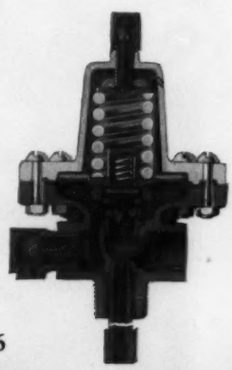


The time of an eclipse can be predicted to the exact second—and years ahead of time too. THAT'S ACCURACY!

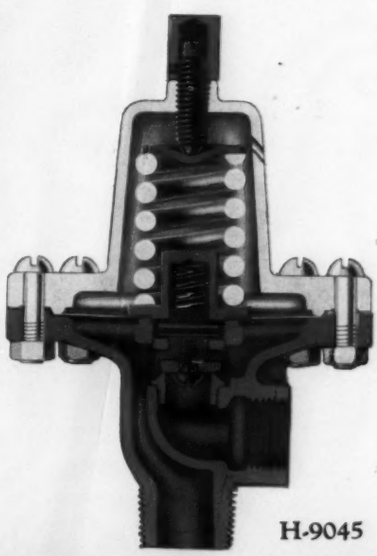
The accuracy with which Mueller Relief Valves respond to excessive pressures is due to their exclusive Auxiliary Spring Seating Principle and their large Monel Metal Diaphragms. The Auxiliary Spring controls the opening and the closing of the valve disc which is made of light composition. The heavy bonnet spring does not rest on the seat washer and cannot press or imbed it into the face of valve opening. The large diaphragm permits the pressure to build up over a greater area, therefore it is more sensitive to excessive pressures than any spring loaded or so-called "pop-valve."

Don't compromise with safety. Install only Mueller Relief Valves on every domestic hot water heater and give your customer and yourself complete protection. All Mueller Relief Valves are approved by Underwriters Laboratories.

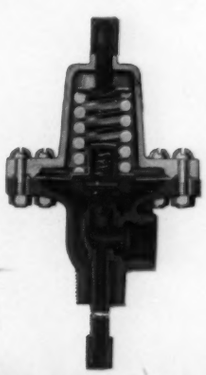
There are many different styles and types of Mueller Relief Valves to suit every purpose and all of them have the exclusive Auxiliary Spring Seating Principle. We suggest you write Mueller Co., Decatur, Ill., Dept. H. for full information.



H-9076



H-9045



H-9046

MUELLER

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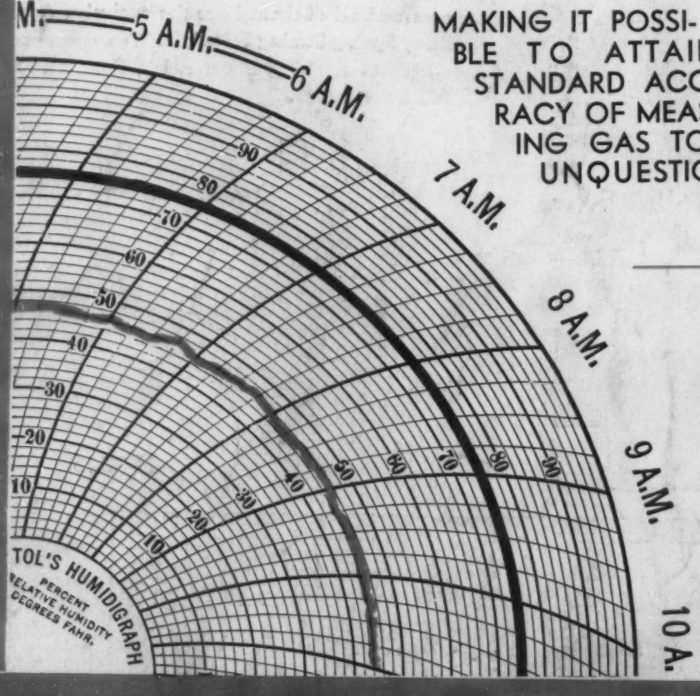
ALL SPRAGUE METERS ARE TESTED FOR ACCURACY IN A MODERN AIR AND TEMPERATURE CONTROLLED PROVING ROOM

A STEP FORWARD IN ELIMINATING HAZARDS OF CHANCE AND OBTAINING THE ULTIMATE IN UNIFORMITY OF PERFORMANCE



MAKING IT POSSIBLE TO ATTAIN STANDARD ACCURACY OF MEASURING GAS TO AN UNQUESTIONABLE DEGREE.

MODERN METERS, BUILT AND PROVED THE MODERN WAY, MAKE FOR DEPENDABILITY, ACCURACY, LONGER LIFE, AND LOWER OPERATING COSTS.

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